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THE

NATIVE PLANTS OF VICTORIA,

SUCCINCTLY DEFINED

57106

BY

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"TRIUMPH THROUGH TIME AND TRUTH."—*Haendel.*

PART I.

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DEDICATED

TO

HIS EXCELLENCY

THE

MOST HONORABLE THE MARQUIS OF NORMANBY, G.C.M.G.,

MEMBER OF HER MAJESTY'S PRIVY COUNCIL.

GOVERNOR OF THE COLONY OF VICTORIA,

AS A

Lasting mark of the Writer's most profound reverence.

PREFACE.

It seems incumbent on the writer to introduce the work, the first part of which is now submitted, by some prefatory remarks to public notice. Since a long time it was his intention, to provide for the colonists generally and for our many educational establishments more particularly a succinct descriptive work on the plants of our territory, in order that at least all the di- and mono-cotyledonous species and the ferns of our colony could be recognized with comparative ease, even without the aid of a teacher. By these means he hoped to initiate a more general study of our native plants in Victorian schools as a sound basis for such phytologic knowledge as might be required, and to provide also readier means for professional gentlemen, horticulturists and amateurs, whom obligatory occupations or an independent inclination might lead to a desire of becoming scientifically acquainted with any portion of our native vegetation. Many years ago a book on an extensive scale, namely "The Plants Indigenous to the Colony of Victoria," accompanied by numerous lithograms, was commenced, to afford the fullest systematic insight into our colonial vegetation; but it was found that such a work, which unavoidably would be far too costly to be accessible to the multitude of the colonists, should be preceded by a less pretensive and more abridged publication of simpler technical wording. Meanwhile the seven volumes of the Flora Australiensis, elaborated through my main aid by Mr. Geo. Bentham, have appeared, a work which taxed also largely that time, which I could devote to literary pursuits for the last seventeen years; thus simultaneously a full account of the Victorian plants, so far as gradually rendered known chiefly by my own field-researches, became available to local observers or students.

Nevertheless, as remarked above, a demand arose for a work of lesser extent and far more limited cost, devoted solely to the Victorian vegetation, a work which should also be more easily portable on excursions and written in a still plainer language; it proved moreover needful, that the beginning enquirer should be encouragingly started in his observations by access to at least one delineating illustration in each of the principal orders or suborders of our plants, so that he could not help, even at the very commencement, to identify a number of species anywhere at a mere glance. When a few years ago after the completion of the greater part of the Flora Australiensis from then existing material (but with exclusion of nearly all Cryptogamæ) the issue of the present work was contemplated, it was deemed more advisable by the writer's Ministerial superiors, that in first instance a small book on our "Wattles, Gum-trees, Honeysuckles, Sheoaks" and other very prominent plants should take precedence. Accordingly a small publication, "Botanic Teachings," with about sixty woodcuts, was issued and distributed to all the State-schools and to many other of our public institutions, and became inexpensively purchasable by the general community. The present Chief Secretary of Victoria has approved of this little preliminary book being followed up by the present work, and this will be done with as much celerity as the means for the preparation of the needful xylographic illustrations will admit of. The postponement thus arisen has however had the advantage of enabling the author to examine the vegetation of several of the remoter districts of Victoria previously not fully traversed by himself; and in the progress of these local investigations much has been added, which in the necessarily more incomplete earlier volumes of the Flora Australiensis could not yet be recorded. If it is remembered, that the area of Victoria is rather larger than that of both England and Scotland, and that even in the United Kingdom yet annually additional plants are discovered, then it cannot be surprising, if we note from year to year also here—where extensive areas are not even yet settled—important additions to the records of our flora, both as regards species and still more so in reference to the localities of their spontaneous occurrence. In the elaboration of

the present book the writer has reduced the technical terms to the lowest minimum, indeed to only about one dozen, so that on this point no one may be deterred from study. Thus, to quote instances, for peduncle the plain English expression flowerstalk was solely adopted; for petiole, leafstalk; for petiolules and pedicels, stalklets; for carpels (irrespective of the objectionable etymology), fruitlets. But it should not be forgotten, that for a fuller definition and more penetrative study of plants many precise systematic terms are as little avoidable as the knowledge of note-cyphers and particular terms and signs for even the elementary acquirement of music or the mere first study of mathematics.

It is perhaps not unnecessary to meet on so apt an occasion as this the thoughtless objections, which sometimes are uttered against the scientific names of our plants, names by which alone they are universally recognized beyond English-speaking communities; few indeed of the Australian plants can aspire to any fixed English name, simply because they are not represented by congeners in Britain; thus in the vast majority of cases English appellations would have to be created for the Australian plants, or their Greek or Latin names would simply have to be translated, with often neither euphony nor expressiveness nor any obligation for adoption; and yet as for refined education some knowledge of the ancient languages is indispensable, I would fain hope, that one of the practical uses of our grammar-schools, namely to lead to a thorough understanding of scientific terms in the exercise of the learned professions, will not become suppressed by the unthinking or ignorant thrusting forth any more their crude notions or even ridicule of scientific names. If we could always be sure to understand, whether any aboriginal names of plants, particularly of such kinds as were in use among the primeval inhabitants of our soil for purposes of their daily life, applied distinctly to a species and not collectively to a group of plants, then we might render such autochthonic appellations in many cases also permanent vernaculars of our own, and save a portion of the local languages of the Australian native race thereby perhaps from final oblivion also.

I had some thoughts of introducing along with each specific diagnosis also a simple symbolic formula, intended to set forth

the cardinal and salient marks in a manner somewhat analogous to that by which Berzelius' formulas give expression to the constituents of any chemical compounds, or comparable to the method adopted for stenography, so far as such principles could be carried out for definitions, which in their totality could never be absolute in the science of plants. Such formulas should be readable in any language and their meaning be recognizable at an easy glance. This principle has in fact long ago found its way to some extent into ichthyology and, as well known, was since Linné's time adopted for significations of the duration of plants. But it will be only after further meditations, that I may be able to fuse and condense any diagnostic sentences into such a clear formular expression as would chance to meet with an undivided approval of phytographic naturalists and would secure that extensive adoption at which should be aimed. Perhaps Providence may spare me life and strength to carry this plan yet into effect for any such future editions of this work as may still appear, especially as a likely demand for this book in the surrounding colonies for identifying there also at least the commoner plants may perhaps early absorb the present edition, and as by providing now once for ever the xylographic blocks any subsequent issues can be rendered still so very much less expensive.

In abridging the ordinal generic and specific descriptions to a short diagnosis, I could not hope, that within the limited space of one small volume the definitions now offered would cover also every aberrant variety, which occasionally may overreach ordinary limitations. Free nature in her inexhaustible richdom of forms can never be fettered into the narrow bounds, which we may assign to any of our technic definitions. Still it is anticipated, that the descriptive passages, given here of any plant, will not leave the enquirer frequently helpless or perplexed during his excursions or in his first studies of collections; although when plants are observed over wide areas and in such copious specimens as cannot be stored up in a museum, not every individual form may fit exactly into the practical limitation adopted descriptively for a species. On the other hand the definitions given in the present work are not based on Victorian species alone; contrarily

the diagnoses, whether ordinal, generic or specific, are extended in such a manner as to apply also to the vegetation of the other colonies and indeed even to plants beyond Australia, wherever our flora comes in contact with that of any other portion of the globe. So at first sight it may appear, as if the repetitions of some characteristics now given and necessitated by comparative studies of Extra-Victorian vegetation were superfluous; whereas in reality our species or genera or even orders are thereby only more fully contrasted with allied even Extra-Australian plants, of course so far as such are hitherto known. In a book of brief descriptions like the present it was deemed unnecessary to note measurements, which always fluctuate and in some cases widely and exceptionally so; but it may be added, that wherever woodcuts illustrate any species in these pages, the main-figure represents the ordinary natural size. Those, who wish to enter on a more extensive study of our native plants, can readily enough procure the volumes of the Flora Australiensis, in which also approximate measurements are detailed. That the last-mentioned work is not referred to throughout this publication finds its explanation in the fact, that those, who wish to commence their studies with the present volume, will not likely procure also the Flora at once, nor as a rule will have that more costly work otherwise readily at hand; hence also all synonymy, which is often bewildering to the tyro, is rigorously excluded as here out of place; besides the views entertained by Mr. Bentham and myself respectively on the limits of genera and species, and therefore the eligibility of names for particular plants, are not always identical. On the other hand, to have apparently burdened the work with the full citation of the particular publication, in which any plant or group of plants was first defined under the name adopted in the present volume, seemed not so undesirable, because it initiates the beginning student at once into the widely scattered original literature devoted to our indigenous flora; it carries with it likewise a chronologic interest by noticing how in the course of ages gradually orders and genera were determined and consolidated, and how during the toilsome researches of several generations species indigenous here became gradually discovered and placed into their correct final systematic positions, only after

a full acquaintance with successively revealed cognate forms here and elsewhere. On the introduction of these sole but full citations into these pages I have consulted the Count de Zaba while on his stay in our city, when this distinguished nobleman and champion of education thought the quotations both chronologically and linguistically most instructive, interesting and desirable.

In the few instances where any particular rare plant was not seen by myself at its place of discovery, I have named the finder; to go further was beyond the limits of this work, which has as regards text much for its prototypes also in this respect Koch's "Taschenbuch der Flora Deutschlands" and Sir Joseph Hooker's "Student's Flora of the British Islands." Designedly omitted are any stray culture-plants and any incidentally or casually introduced species (even such as the overpowering so-called Cape-weed, known as Cryptostemma calendulaceum, R. Br., immigrated into Australia since 1833), because not only would it be difficult to affirm, where the annually increasing number of these kinds of hospitants or invaders or garden fugitives was to end in any literary enumeration of the vegetation of our prolific clime, but the arbitrary admission of any of them into this book would also disturb an unimpaired view over the purely native flora of our land, expected to be obtained from these pages. The enquirer must resort to Extra-Australian works to find the needful instruction, should he wish to draw also the colonized British or foreign plants here within the cycle of his study. The systematic arrangement adopted is that of the Candollean or reversed Jussieuan natural system, with this important change variously suggested before, that the monochlamydeous or apetalous division has been restricted to the Coniferæ and orders very closely allied to them. In the progress of discovery the artificial separation of monochlamydeous orders has become more and more untenable, all of them, with the above-noted exception, bearing convenient and quite natural insertion among the more highly developed orders of plants. To instance merely the disruption of affinities, caused by holding separate the monochlamydeous series and by adhering also too rigorously to the different position of the fruit in relation to the calyx and to staminal affixion, we have the extremely

natural row of amyliferous (or curvembryonate) orders distributed in the Flora Australiensis through all the five volumes of dicotyledonous plants; all these ordinal groups being brought close together in this first part of the abridged work now submitted.

In using this book I would advise, that the beginner should compare any such universally known native plants as a Ranunculus, Drosera, Correa, Mesembrianthemum &c. with the xylographic drawings now offered as illustrative of the genus or species, by which means the characteristics of each as well as the few scientific terms used in this publication will be far more vividly recognized and far more lastingly impressed on the memory than by any other method of teaching, especially if he resorts simultaneously to the formation of a collection of such plants as he had occasion thus to examine; he should then pass on to the ordinal description, to obtain an idea on what principles the systematic natural arrangement is based. This comparison of the illustrations at the very commencement of study will do also away with the necessity of referring to any kind of glossary. Or the tyro might cast a view on the different woodcuts and seek to remember, whether and where he had seen any plant showing resemblances to those illustrated; in obtaining then the material of native growth, the comparisons can be followed up, while the exact genus and also the particular species will be traced out mostly with comparative ease. In ampler furtherance of this object, the fascicles of the "Educational Collections of Australian Plants"—representing hitherto 150 species in dried natural specimens, and deposited on my suggestion at most of the free libraries and mechanics' institutions—could also be consulted with advantage. Furthermore the atlas of lithograms of my larger work on Victorian plants, accessible at the same public institutions, ought to facilitate the studies of those, who noways were initiated before in this particular direction. But for an advanced learning in the Australian vegetation the "Prodromus" of R. Brown will always remain the firm though unfinished basis; indeed no subsequent individual researches can compare in importance to those carried on by that great man already in the beginning of this

century, when it fell to his enviable share under the most favorable circumstances to examine personally the vegetation of our island-continent along much of its litoral tracts, and thereby to continue what was begun by Sir Joseph Banks; thus R. Brown's illustrious name has become impressed on every square-mile of this great portion of Her Majesty's possessions for all ages, through the thousands of plants, which he as the first in the field discovered, many of which carrying his name from the oceanic shores also to Central Australian regions. The collaborators of Lehmann towards the middle of the century have mainly rendered known the marvellously varied and endemically so peculiar vegetation of South-West Australia. De Candolle's Universal "Prodromus," particularly the later volumes, unfolded still further the instructive and charming pictures of our continental flora, in the fields of which Cunningham and Drummond as gatherers leadingly toiled. Sir Joseph Hooker's celebrated and ample work on the Tasmanian plants, finished in 1860, may be regarded as almost exhaustive, so far as its scope admitted. What had been achieved throughout more than a century has, with his almost unexampled assiduity and genius, been brought together and to some extent re-arranged by the venerable George Bentham (through what may be fairly claimed an unabating co-operation of my own), into a connected rectified form, and has been embellished with exceedingly numerous observations of intrinsic value, that great observer, with facilities for phytographic research, which will never again fall to the share of any mortal, abandoning in this century of main discovery in natural history even the still more glorious treasures of tropical Africa and of the Brazilian empire, to devote largely the autumn of his laborious life for providing a series of volumes on the higher developed plants of the fifth continent so far as hitherto known. As unitedly all the extensive writings since the last seventy years will be the main foundations, on which future kindred investigations must rest, even for the elaboration of our colonial floras, and as they must continue the sources from which educational or industrial works bearing on the vegetation of Australia will be derived, and as even elementary works claiming originality like

the present can emanate only from critical comparisons, it may in summing up be perhaps worthy of some slight notice, that the author of the present unpretensive volume (which is written under singular disadvantages after the disruption of his department, now sadly impeded even in this direction) has endeavoured by the sacrifices of almost everything else in life to bear honorably also his share in the elucidation of the Australian flora. His personal Australian field-researches extended since 1847 over observation-lines of about 28,000 miles length. He furthermore effected by the additional aid of collectors and particularly of amateurs the accumulation of much over 100,000 specimens of museum-plants, examined by himself, from all parts of Australia hitherto explored, collections for extent quite unique in the southern hemisphere. Among his literary contributions, considerably more than 3,000 pages are devoted to descriptive records of plants all of nearly absolute originality, apart of his writings specially applied to the utilisation of Australian plants in the arts or in medicine or culture, and irrespective of his essays as well as practical tests and measures in reference to the introduction of prominent industrial plants from other parts of the globe into this, the grandest portion of all the wide and rich dominions ruled under the Crown of Britain.

FIRST MAIN-DIVISION.

DICOTYLEDONOUS PLANTS.

Dicotyledones; Ray, methodus plantarum emendata et aucta, 2 (1703).

STEM when perennial with separable bark, distinct wood and central pith; additional annual concentric layers between bark and wood. Leaves or their stalks generally articulated at the point of insertion. Veins of leaves usually branched, very seldom closely parallel. Corolla very frequently present, as well as the calyx consisting prevailingly of four or particularly five parts. Genuine stamens, pistils and embryonate seeds always developed. Cotyledons almost constantly 2 and opposite, or very seldom 3 or more in a whorl or obliterated. First rudimentary leaves from the germinating seed always opposite.

I. CHORIPETALEÆ HYPOGYNÆ.

Orders of dicotyledonous plants with disunited petals or without petals, and with fruits free of the calyx. (Exceptions rare.)

ORDERS:

Ranunculaceæ: Sepals mostly deciduous. Petals overlapping in bud, rarely none. Stamens numerous, seldom few; their evolution centripetal. Anther-cells adnate in their whole length. Ovules attached to the sutural edge. *Fruitlets disconnected. Seeds without an appendage* (or aril). Albumen usually horny. *Embryo very small,* at the base of the albumen.—Herbs, rarely shrubs; stipules usually absent; leafstalks mostly clasping at the base.

Nymphæaceæ: Sepals free or at the base connate, usually persistent. Petals in 1 or more rows, mostly inserted on a dilated axis or receptacle, overlapping in bud, generally persistent. Stamens numerous, rarely in definite number. Anther-cells adnate. Ovules several or numerous, attached to the walls of the cavity, rarely 1. Fruit generally indehiscent and longitudinally septate, far less frequently consisting of disjointed fruitlets. Seeds with or without an appendage. *Albumen starchy,* seldom none. *Embryo usually very small, and lodged in a separate basal cavity.*—Waterplants; leaves rolled inward before expansion.

Dilleniaceæ: Sepals mostly persistent, as well as the petals generally 5. Petals overlapping in bud. Stamens numerous, seldom few; their evolution centrifugal. Anther-cells adnate in their whole length. *Fruitlets almost always disconnected. Seeds mostly surrounded by an appendage.* Albumen carnulent. *Embryo very small,* at the base of the albumen.—Shrubs, rarely herbs or trees; stipules usually absent.

Magnoliaceæ: Sepals mostly deciduous, as well as the *petals* in most instances *three in each row,* overlapping in bud. Number of stamens indefinite. *Fruitlets generally disconnected.* Seeds without an appendage. Albumen solid (unbroken). *Embryo very small.*—Trees and shrubs, often aromatic, sometimes climbers; stipules usually developed.

Anonaceæ: Sepals usually 3, with their margins in bud contiguous, or rarely the calyx valveless and circumcised. *Petals frequently* 6 *in two rows,* rarely fewer or absent. Stamens almost constantly indefinite, forming many rows. Anther-cells slit externally or along the margin; the connective often dilated upwards. Ovaries mostly indefinite. Fruitlets free or consolidated into one. *Albuminous part of the seed broken. Embryo very small,* lodged at the base of the albumen.—Trees or often climbing shrubs, more or less aromatic; leaves undivided, without any stipules.

Monimieæ: Calyx cleft into four or more lobes or terminated in a lid. *Petals none.* Stamens generally indefinite in number, affixed to the base or sides or orifice of the calyx. Cells of the anthers longitudinally adnate. Ovaries inserted on the base or sides of the calyx, rarely reduced to one, each with one ovule. *Fruitlets indehiscent, mostly free.* Albuminous portion of the seeds carnulent. Embryo small.—Shrubs or trees; leaves mostly opposite; stipules none; *flowers nearly always unisexual.*

Lauraceæ: Calyx cleft usually into six biseriate lobes. Petals none. Stamens affixed to the base or orifice of the calyx, definite in number, forming 3 or 4 rows, a portion not rarely transformed into scales or glands or antherless; the outer stamens facing inward, the inner usually outward; *anthers opening with* 2 *or* 4 *mostly adscending valves.* Ovary 1-celled, with 2 or 3 placentas fixed to the walls of the cavity; *ovule only* 1 rarely 2. Fruit indehiscent. *Seed without albumen.* Embryo straight; radicle superior, short.—Aromatic trees or shrubs or parasitic winding leafless herbs; foliage rarely deciduous, leaves always toothless, usually scattered; flowers never large; fruits often berry-like.

Menispermeæ: Sepals definite, generally in 2 or more rows. *Petals often ternary in whorls,* almost constantly smaller than the sepals, not always developed. Stamens distinct or united, mostly opposite to the petals. Style undivided or cloft, becoming in age often lateral or basal. Ovaries usually 3, less frequently more or fewer, with 1 ovule. *Fruitlets free, whorled,* oblique, indehiscent, seldom solitary. Seed frequently curved. Albumen carnulent or absent. *Embryo clon-*

gated, often curved.—Climbers; leaves broad, scattered, entire, very rarely compound; stipules none; *flowers unisexual*, of inconspicuous size; fruitlets often succulent outside, hard inside, generally with a protuberance intruding into the cavity.

Papaveraceæ: Sepals 2, rarely 3 or 4, early deciduous. *Petals* 4, rarely more or none, folded or crumpled in bud, fugacious (in one case persistent). Stamens definite or indefinite in numbers, free. Ovary 1-celled, rarely with 2 or more cells. Fruit valveless or formed of two or more valves, rarely consisting of separate fruitlets. Placentas often persistent. Seeds usually numerous; their albuminous portion oily. *Embryo minute*, at the base of the albumen.—Herbs, seldom woody plants, their *sap colored* or rarely limpid. Leaves mostly scattered. Stipules none. Flowers often showy.

Cruciferæ: *Sepals always* 4, in somewhat unequal pairs, mostly overlapping in bud, the outer pair opposite to the placentas, the inner pair usually protuding at the base. Petals 4, rarely 2 or none, deciduous. *Stamens* 6, *two of them shorter*, rarely fewer (only in one known instance numerous); anther-cells slit along the inner face. Stigmas 2, generally confluent. Fruit often deciduously 2-valved and longitudinally 2-celled. Seeds fixed to the intervalvular narrow persistent placentas. *Albumen none* or very rarely present. *Embryo variously curved*, hardly ever straight; radicle very often adscending. —Herbaceous or infrequently half-woody plants, of volatile acridity and limpid sap. Leaves mostly scattered, at the root often crowded. Flowers with rare exceptions in racemes. Stipules and bracteoles none.

Capparideæ: Sepals 4, occasionally 2 or 5 or 8 or the calyx not regularly divided. *Petals* 4, rarely more or none. *Stamens usually indefinite in numbers*, free or connate. Anther-cells slit along the inner face. Ovary free, solitary, often stalked. Stigmas usually united. Fruit 1-celled, forming a deciduously valvate capsule or a berry. Placentas attached to the walls of the fruit or intervalvular. *Seeds without albumen. Embryo variously curved.*—Herbs, shrubs or trees; leaves scattered, simple or compound.

Violaceæ: *Flowers generally unsymmetrical.* Sepals 5, persistent, overlapping in bud. Petals 5, free, generally convolute before expansion. *Stamens* 5; *filaments broad, flat, extended beyond the anthers.* Anther-cells bursting along the inner face. Style 1. Stigma oblique. Ovary 1-celled. Fruit capsular, less frequently forming a berry. Placentas generally 3, always and permanently attached to the sides of the fruit. Seeds appendiculate. Embryo straight, erect, in the axis of the fleshy albumen.—Herbs or shrubby plants. Leaves simple. Stipules present.

Pittosporeæ: *Flowers generally symmetrical.* Sepals and petals 5, rarely 4, overlapping in bud, deciduous. Stamens as many as petals. Anthers opening by slits or terminal pores. Style simple. Ovary 2–5-celled, rarely 1-celled. Fruit capsular or a berry, without a free central

column. *Seeds attached to the septa*, albuminous. *Embryo minute.*—Trees or shrubs, rarely herbs ; leaves scattered, without stipules ; petals never extremely tender.

Droseraceæ : *Flowers symmetrical.* Calyx cleft into free sepals or rarely tubular towards the base ; sepals or lobes as well as the petals overlapping in bud and persistent. Stamens definite. Anther-cells slit longitudinally. Styles 1 or more. Capsule 2–5-valved or rarely valveless, 1–5-celled. *Seeds generally affixed to the walls of the fruit, albuminous*, without appendage.—Herbs, rarely somewhat woody plants, almost always glandulous-hairy ; *leaves irritable, as well as the flower-stalks coiled up before expansion ;* petals usually extremely tender.

Hypericineæ : *Flowers symmetrical.* Calyx persistent, consisting of 4 or 5 rarely 2–3 lobes or sepals, overlapping in bud. Petals 4 or 5, rolled inward or twisted before expansion. Stamens disconnected or united into bundles or rarely into a tube. Anther-cells slit longitudinally. Styles 2 or several. *Fruit* completely or incompletely or not septate, *generally bursting along the septa.* Seeds without or seldom with scanty albumen. Embryo usually straight.—Herbs, shrubs or rarely trees, not seldom resinous-glandular ; leaves usually opposite.

Polygaleæ : *Flowers unsymmetrical.* Calyx consisting frequently of 2 or 3 outer small sepals and 2 inner petal-like sepals, far less often the sepals not very unequal. *Petals* unequal, 3–5, mostly *connected with the staminal tube*, seldom free, the lowest petal usually the largest and including the stamens and pistil. *Stamens* 8, rarely fewer. Filaments connate into a tube slit in front, seldom free. *Anthers* 1-*celled, opening by a terminal pore*, rarely 2-celled. Ovary with 2 rarely 1 or 3 cells. Ovules 1–2 in each cell. Styles united into one. Fruit generally capsular and compressed, often 2-celled, bursting along the margin, rarely indehiscent. Placentas axillary. Seeds pendent, usually albuminous. Embryo axillary ; radicle superior.—Herbs or shrubs, often of bitter taste ; leaves undivided, mostly scattered, without stipules. Flowers bracteolate, mostly in spikes or racemes.

Tremandreæ : Flowers symmetrical. *Sepals* 4–5, their margins *contiguous in bud. Petals* 4–5, free, decidous, *induplicated* before expansion. Stamens 8–10, free. *Anthers opening by a terminal pore.* Ovary 2-celled, with 1–3 ovules in each cell. Styles united into one. Fruit capsular, compressed, 2-celled, bursting along the margin. Placentas axillary. Seeds pendent. Embryo in the axis of carnulent albumen ; radicle superior.—Perennial herbs or somewhat woody plants ; leaves simple, without stipules ; seeds usually appendiculate.

Rutaceæ : Flowers symmetrical. Calyx consisting usually of 4–5 sepals or lobes, rarely obliterated. Petals equal in number to the divisions of the calyx, often distinct than coherent, rarely absent. Stamens definite in number. Anther-cells slit along the inner face. Styles frequently united into one. Ovaries 2–5, coherent, 1-celled. Ovules axillary, 1 or 2, rarely more. *Fruitlets bivalved*, rarely quite consolidated and indehiscent, the inner layer of the valves frequently separating.

Embryo generally straight; radicle superior.—Strong-scented arboreous shrubby or but slightly wooded plants, *dotted with oily or resinous glands*, without stipules.

Zygophylleæ: Sepals 4–5. Petals as many, rarely absent. Stamens almost always definite; the *filaments often dilated or provided with appendages.* Anther-cells slit longitudinally. Ovary usually 4–5-celled. Style 1, rarely several. *Fruit capsular or consisting of free or coherent fruitlets*, rarely a drupe. Seeds pendent. Embryo long and straight, seldom curved; radicle superior.—Herbs or shrubs, rarely trees, always *destitute of oil-glands.* *Leaves stipulate*, opposite, rarely alternate, frequently compound.

Lineæ: Flowers symmetrical. Sepals 5, seldom 4, overlapping in bud. Petals as many, generally twisted before expansion. Stamens definite in number; filaments often at the base united and there gland-bearing. Anther-cells slit longitudinally, not adnate. *Ovary* 5-celled, rarely 3–4-celled, generally *with two pendent collateral axile ovules in each cell. Styles as many as ovary-cells*, free or connate. Fruit capsular or drupe-like. Seeds with rare exceptions albuminous. Embryo long, straight, seldom curved; radicle superior. — Herbs or woody plants. Leaves nearly always scattered and entire; petals mostly tender and fugacious.

Geraniaceæ: Sepals usually 5, seldom fewer, free or rarely united towards the base. Petals of the number of sepals, seldom fewer or none, nearly always overlapping before expansion. Stamens definite in number; filaments often at the base united. Anther-cells slit longitudinally, not adnate. Ovary with 3–5, rarely 2 cells, each cell with 1 or 2 rarely more ovules. *Fruit capsular or consisting of* 3–5 *free or consolidated fruitlets. Fruit-axis persistent.* Seeds generally with only scanty or without albumen.—Herbs or shrubs; leaves opposite or scattered, often stipulate, simple or compound.

Malvaceæ: *Calyx* cleft into 5, seldom fewer or more lobes; their margins always *contiguous in bud.* Petals generally 5, twisted before expansion. Stamens usually indefinite; *filaments united into a tube* and connate with the base of the petals. *Anthers* 1-*celled*, bivalved, not longitudinally adnate. Ovary with 5 or more seldom less cells. Ovules affixed to the inner angle of the cell. Styles as many as ovary-cells, rarely fewer. Fruit capsular or consisting of free or coherent fruitlets, whorled around a central column. Seeds with usually scanty albumen. Embryo curved; cotyledons mostly folded.—Herbs or shrubs, seldom trees, frequently star-hairy and mucilaginous; bast tough; leaves scattered, generally herbaceous, never really compound. Stipules present; flowers often showy.

Sterculiaceæ: *Calyx* cleft into usually 5 lobes or sepals, sometimes irregularly torn, the margins of the divisions *contiguous in bud.* Petals mostly 5, not rarely absent. Stamens definite or indefinite in numbers. *Filaments* almost always *united into a tube* or bundles. Anthers 2-celled, slit longitudinally. Ovary with 2–5, rarely more or

but 1 cell. Ovules attached to the inner angle of the ovary. Styles coherent or free, seldom undeveloped. Fruit capsular or consisting of free fruitlets. Seeds with or without albumen.—Shrubs or trees, rarely herbs, frequently star-hairy and mucilaginous; bast often tough, leaves with rare exceptions scattered, oftener simple than compound. Stipules developed.

Tiliaceæ: Flowers symmetrical. *Sepals* usually 4 or 5, free and deciduous; their margins *in bud usually contiguous.* Petals as many as sepals, in some instances absent. *Stamens mostly free,* oftener indefinite than definite in numbers. Anthers 2-celled, slit longitudinally or terminally. Ovary 2–10-celled. *Ovules* 1, 2 or more, attached to the inner angle of the ovary-cell, *usually pendent,* with a ventral raphe. Styles united into 1, rarely not formed. Fruit capsular or drupaceous, or consisting of coalescent fruitlets. Seeds frequently with carnulent albumen and large embryo.—Trees or shrubs, rarely herbs; bast generally tough; leaves mostly scattered, never compound. Stipules mostly developed; seeds sometimes appendiculate by an aril.

Euphorbiaceæ: *Flowers always unisexual.* Calyx variously lobed, seldom undeveloped. *Petals* free, rarely united, *often absent.* Stamens several or numerous, or reduced to one. Anthers opening with slits, rarely with pores. *Ovary frequently 3-celled,* rarely with fewer or more cells; ovules 1 or 2, pendent from the inner angle of the ovary-cell. Raphe usually ventral. *Fruit generally capsular, with two valves to each cell and a persistent axis.* Seeds with copious albumen. —Herbs, shrubs or trees, not infrequently pervaded by a milky and poisonous sap; leaves generally scattered and stipulate, very rarely compound; flowers seldom showy; fruit often bursting with elasticity.

Urticeæ: *Flowers unisexual* or mixedly uni- and bisexual or rarely all bisexual. Calyx cleft into 4–5, rarely fewer or more lobes or sepals, seldom deficient. *Petals none.* Stamens generally equal in number to the divisions of the calyx and opposite to them. Anther-cells opening by internal slits, not longitudinally adnate. *Ovary 1 or 2-celled,* with 1 or 2 styles or stigmas. *Ovule solitary. Fruit indehiscent.* Seed with oily-carnulent or without albumen; radicle superior.—Herbs, shrubs or trees; leaves simple, stipulate; flowers inconspicuous.

Viniferæ: Flowers symmetrical. Calyx persistent, toothed or with an entire margin. *Petals* 4 or 5 rarely 6, deciduous, their margins *contiguous in bud. Stamens free, singly opposite to the petals.* Anther-cells slit longitudinally. Ovary with two or rarely more cells. Ovules 2, rarely 1, erect. Style 1 or undeveloped. Berry with hard seeds. Inner membrane of the seeds intruding into the *wrinkled or lobed albumen,* which is of almond-like consistence. Embryo minute, basal; radicle inferior.—Climbing shrubs, occasionally becoming trees, seldom almost herbaceous; branches generally jointed; leaves scattered, deciduous or evergreen; tendrils often developed and as well as the flower-stalks opposite to the leaves.

Sapindaceæ: Calyx cleft into 5 rarely fewer or more sepals or lobes or merely toothed. Petals 5, alternate with the divisions of the calyx or 1 or all absent, overlapping in bud. Stamens with rare exceptions definite. Anther-cells slit longitudinally on the inner face. *Styles united into one.* Ovary with 2–4 or rarely more cells; ovules 1 or 2, rarely more. *Fruit* capsular, seldom drupaceous or *consisting of coherent or almost free fruitlets.* Seeds often without albumen. *Embryo variously curved,* seldom straight. — Trees or shrubs rarely herbs; tendrils not often developed; *leaves frequently compound* and scattered and without stipules; seeds usually appendiculate.

Celastrineæ: Flowers symmetrical. Calyx 4–5-lobed, persistent. Petals 4–5, overlapping in bud. *Stamens in most instances singly alternate with the petals.* Anthers 2-celled. Ovary mostly 3–5-celled. *Styles united.* Ovules frequently 2 and erect. Fruit capsular or indehiscent. *Seeds usually appendiculate* and with carnulent albumen. *Embryo straight,* mostly large; radicle inferior. — Trees or shrubs; leaves always simple, never lobed; flowers mostly small.

Stackhousiaceæ: Flowers symmetrical. Calyx 5-lobed, with adnate tube or rarely consisting of 5 free sepals, the divisions overlapping in bud. *Petals 5, coherent,* rarely quite free. *Stamens singly alternate with the petals.* Anther-cells slit longitudinally along the inner side. Ovary with 3 rarely more cells. *Style* 1, with 3 seldom 2, or 4 or 5 stigmas. Ovules solitary, erect. *Fruit consisting of* 3 *seldom* 5 *indehiscent usually coherent fruitlets,* arranged around a central column. Seeds with carnulent albumen. Embryo straight; radicle inferior.—Herbs, rarely somewhat woody; leaves scattered; flowers in spikes, rarely racemes.

Frankeniaceæ: Flowers symmetrical. *Calyx tubular,* persistent; its lobes 4–7; their margins while in bud bent inward and contiguous. Petals 4–7, appendiculate; their upper margins overlapping before expansion. Stamens 3–10, rarely numerous, free or below coherent. Anther-cells slit along the outer side, not adnate longitudinally. Style 2–5-cleft. *Ovary* 1-*celled, with* 2–5 *placentas attached to the sides.* Ovules several or numerous. Fruit 2–5-valved. *Seeds with starchy albumen. Embryo straight;* cotyledons broad, radicle inferior.—Herbs or somewhat woody plants; branches articulated; leaves opposite or whorled or fascicled, without stipules.

Plumbagineæ: Flowers symmetrical. *Calyx tubular,* with 5 lobes, contiguous or folded in bud; or rarely consisting of 5 connivent sepals. Petals 5, free or at the base confluent, or below connate into a tube; their free portion imbricate or twisted in bud. *Stamens* 5, *opposite to the petals* and connate with them or free. Styles usually 5, free or united. *Ovary* 1-*celled, free, with* 1 *ovule.* Fruit bursting into valves or opening by circumcision or indehiscent. Funicle from the bottom of the cavity. Seed pendent. *Albumen starchy. Embryo straight.* Cotyledons broad.—Herbs or shrubs; leaves scattered or near the root crowded, without stipules; bracts and bracteoles usually scarious.

Portulaceæ: *Sepals fewer than petals,* often 2 and free. Petals 5, sometimes 4 or 6 or more, fugacious. Stamens frequently indefinite in number. *Ovary* 1-*celled.* Ovules usually numerous; their cords of attachment arising from the bottom of the ovary. Stigmas 2 or more. Fruit free or semiadnate, bursting into as many valves as styles or circumcised or seldom indehiscent. *Seed with starchy albumen. Embryo mostly peripheric.* — Herbs or rarely shrubby plants; leaves scattered, rarely opposite, always undivided, often succulent; petals usually of extreme tenderness.

Caryophylleæ: Flowers symmetrical. Calyx persistent, almost always free, consisting of 4 or oftener 5 sepals, or tubular with several lobes or teeth. Petals equal in number to the divisions of the calyx, often contorted before expansion, fugacious, rarely none. *Stamens definite in number. Ovary* 1-*celled; ovules* 2 *or more,* rarely 1.; their cords of attachment arising from the bottom of the ovary. Fruit free, with as many or double as many valves as styles, rarely indehiscent. *Seeds with usually starchy albumen. Embryo mostly peripheric,* rarely straight.—Herbs or slightly shrubby plants; *leaves opposite,* only in Paronychieæ scattered, always undivided.

Salsolaceæ: Calyx persistent, divided into 5 or rarely fewer lobes. *Petals none.* Stamens as many as divisions of the calyx or fewer. *Ovary* 1-*celled; ovule* 1. Stigmas 2 or 3, rarely 1 or 4. *Fruit not regulary dehiscent. Seed with starchy albumen,* much less frequently without albumen. *Embryo peripheric,* rarely circinate-coiled.—Herbs or shrubs; *leaves scattered,* rarely opposite, often succulent, always without stipules, sometimes obliterated; flowers inconspicuous.

Amarantaceæ: Calyx persistent, divided into 5 sepals or lobes. *Petals none.* Stamens 5 or fewer. *Ovary* 1-*celled;* ovule 1, seldom more. Stigmas 1–3. *Fruit* not regularly dehiscent, or circumcised. *Seed with starchy albumen; embryo peripheric.*—Herbs or shrubs, rarely trees. Leaves opposite or scattered, undivided, without stipules; *bracts and bracteoles* and also often the calyx *scarious.*—Herbs, seldom shrubs, very rarely trees; leaves opposite or scattered, lobeless, without stipules.

Phytolaccæ: Calyx divided into 4 or 5 rarely 3 sepals or lobes or 4–8 teeth, persistent. Petals generally absent. Stamens free or at the base united. Ovules usually single in each ovary-cell. *Fruit consisting of one or more free or connate fruitlets,* often circularly arranged around a central column or forming a berry. *Seeds with starchy albumen,* or rarely the latter carnulent or undeveloped. *Embryo mostly peripheric.* —Herbs, less frequently shrubs, exceptionally trees; leaves scattered, lobeless.

Ficoideæ: Calyx divided into 5 sometimes 4 rarely less or more sepals or lobes; its tube free or adnate. Petals when present as well as the stamens mostly indefinite. *Ovary with* 2 *or more cells,* rarely 1-celled. Ovules 1 or more in each cell. Fruit oftener dehiscent than indehiscent. *Seeds usually with starchy albumen. Embryo peripheric,*—

Herbs or somewhat shrubby plants, oftener succulent; leaves scattered or oftener opposite, lobeless; flowers not seldom showy.

Polygonaceæ: Calyx divided into 6 or 5 or rarely fewer sepals or lobes, these generally in 2 rows. *Petals none.* Stamens definite or indefinite, never numerous. *Ovary 1-celled; ovule* 1. Styles 2–3, rarely more. *Fruit indehiscent. Seed usually with starchy albumen. Embryo lateral or axillary.*—Herbs or shrubs, rarely trees; leaves scattered; *stipules united into a tube,* scarious, flowers unsupported by bracteoles, sepals often petaloid; fruit enclosed in the calyx.

Nyctagineæ: *Calyx* with 5 rarely 4 lobes; its *tube adnate. Petals none.* Stamens definite or indefinite in number. *Ovary 1-celled; ovule* 1. Style 1; stigma undivided. *Fruit indehiscent. Seed with starchy albumen.* Embryo peripheric or central. *Cotyledons folded or convolute.*—Herbs, shrubs or trees; leaves frequently opposite and lobeless.

RANUNCULACEÆ.

A. L. de Jussieu, recueil de l'académie des sciences (1773), from B. de Jussieu (1759).

GENERA:

Ranunculus: Sepals equal, 3–7, often 5; their margins overlapping in bud. Petals mostly 5, in some instances numerous, very rarely 3 or absent, inside towards the base with 1 rarely 2 or 3 glandular grooves. Stamens and pistils several or numerous, seldom few. Ovule 1. Fruitlets crowded on a generally short axis (receptacle), permanently closed. Seed erect.—Acrid herbs; leaves scattered, those near the root crowded, all often divided; flowers frequently terminal.

Myosurus: Sepals equal, 5 sometimes 6–8; their margins overlapping in bud; their base long extended beyond the point of insertion. Petals 5, rarely 6–7, minute, stalked conspicuously, inside towards the base with one glandular groove, or altogether absent. Stamens 5–20. Ovule 1. Fruitlets very numerous, crowded on a long receptacle, permanently closed. Seed pendent.—Annual herbs; leaves all at the root and undivided; flowers singly terminal.

Clematis: Sepals equal, 4–10; their margins contiguous in bud. Petals absent, rarely present. Stamens 6 or more, often many. Ovules few or 1. Fruitlets crowded on a short receptacle, permanently closed, terminated by a generally elongated and feathery style. Seed solitary, pendent.—Generally climbing and woody plants; leaves opposite, often compound; sepals petal-like.

Caltha: Sepals equal, 4 or more; their margins overlapping in bud. Petals absent. Stamens 5 or more. Ovules many. Fruitlets disposed in a single whorl, bursting along their anterior margin. Seeds more than 1.—Leaves most or all from the root; stipules present; sepals petal-like.

RANUNCULUS.

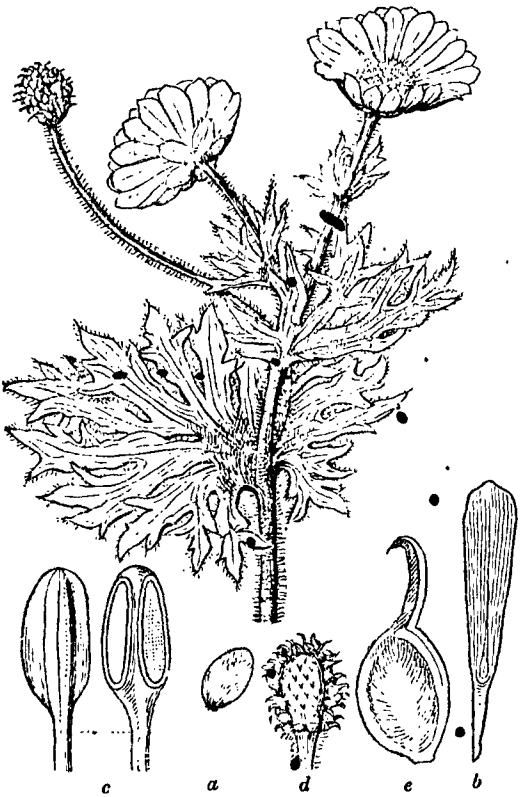
Tournefort, institutiones rei herbariæ 285, tab. 149 (1700); from Plinius, historiæ naturalis libri xxv. 109 (edit. 1469).

Richly represented in all cold and temperate countries, scantily only in intratropical lowlands or absent there. Name, best rendered English as "Frogplant," alludes to the occurrence of some of the early discovered species in swampy places.

SPECIES:

Ranunculus anemoneus.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria, i. 97 (1854).



Perennial; lowest leaves on long stalks; stem leaves sessile, only formed at or near the base of the flowerstalks; all deeply cleft into jagged lobes; petals long, white, numerous; gland-groove margined only; fruitlets numerous, smooth, terminated by the recurved style.

On alpine springs of the highest sources of the Murray-River, not decending to below 6,000 feet.

Extends to New South Wales.

Species-name from the Anemone-like aspect.

Fig. 1.—*a*, sepal; *b*, petal; *c*, anthers, enlarged; *d*, receptacle, the fruitlets partly removed; *e*, fruitlet, enlarged.

Ranunculus aquatilis.

Linné, species plantarum 556 (1753); from Dodonæus, stirpium historiæ pemptades 387 (1583).

Perennial; rooting at the joints and glabrous except the fruit; submersed leaves repeatedly divided into numerous hairlike segments; floating leaves in outline somewhat kidney-shaped, lobed or notched, frequently here undeveloped; stalks opposite to the leaves, with one flower; petals white, with yellow base, their gland-groove without a scale; fruitlets with a very short style, wrinkled when dry.

In swamps, lakes and rivers as well of fresh as of brackish water, not frequent.

Extends to many countries both of the northern and southern hemisphere.

Ranunculus Millani.

F. v. Mueller, in Hooker's Kew Miscellany vii. 358 (1855).

Annual, dwarf, almost stemless; leaves cleft into a few linear segments; flowerstalk soft-hairy, with one flower; petals 5–10, white, their gland-groove not evidently provided with a scale; fruitlets few, terminated by the recurved style.

In the snow-regions of the Australian Alps on gravelly humid depressions.

Extends to New South Wales.

Species-name in honor of the late Angus Macmillan, Esq., the discoverer of Gippsland, who first crossed our Alps.

Ranunculus Muelleri.

Bentham, flora Australiensis i. 13 (1863).

Perennial, dwarf, stemless; leaves wedge-shaped or oblong, tooth- and lobeless or with a few teeth near the summit, on the surface long-hairy; stalk one-flowered; petals yellow; fruitlets terminated by the straight style.

On alpine mountains near permanent snow, about the highest sources of the Murray-River.

Extends to New South Wales.

Ranunculus lappaceus.

Smith, in Rees's Cyclopædia 1819, num. 61.

Perennial, soft-hairy; root without offshoots; leaves cleft into 3–5 or more rather broad and toothed lobes, the majority from the root, the stem-leaves smaller and less divided or almost absent; flowerstalks furrowed; sepals appressed; petals yellow, 5 or seldom more, their gland-groove with a scale; fruitlets smooth, terminated by the recurved style.

Not uncommon, chiefly on pasture land.

Extends widely through extratropic Australia, also to New Zealand.

Species-name in allusion to the hooked fruitlets, which adhere like those of the Burdock (Arctium Lappa of Linné).

Ranunculus hirtus.

Banks et Solander, in G. Forster's florulæ insularum australium prodromus 90 (1786).

Perennial, soft-hairy; root without offshoots; lowest leaves mostly cleft into 3 primary and several secondary lobes; upper leaves few; sepals reflexed; petals yellow, rather small, their gland-groove with a scale; fruitlets terminated by the recurved style.

On pastures and meadows, not common.

Extends to New South Wales, South Queensland and New Zealand.

The species-name refers to the hairiness of the plant.

Ranunculus rivularis.

Banks et Solander, as above.

Perennial, generally glabrous; stem creeping or sometimes floating; leaves rather small, cleft into several or numerous crowded segments of variable form; stalks one-flowered; petals 5–12, yellow, generally small; fruitlets smooth, suddenly terminated by the almost straight style.

On wet places, rather frequent.

Extends to South Australia, Tasmania, New South Wales, South-Queensland, and New Zealand.

The species-name indicates, that the plant flourishes particularly along rivulets.

Ranunculus Gunnianus.

Hooker, Journal of Botany i. 245, t. ccxxxiii. (1834).

Perennial, stemless; leaves thick, dissected into narrow lobes; flowerstalk stemlike, with 1 or rarely 2 flowers; petals 5–10, outside purplish, inside yellow and with 3 scaleless gland-grooves; fruitlets smooth, terminated by the straight style.

Dispersed throughout the higher alpine ranges.

Extends to New South Wales and Tasmania.—Dedicated to Ronald Gunn, Esq., F.R.S., of Launceston, the discoverer of this species.

Ranunculus parviflorus.

Linné, species plantarum, editio secunda, 780 (1762).

Annual; leaves small, variously slit; flowers opposite to the leaves, very small, sessile or on short stalks; sepals reflexed; petals yellow, 5 or rarely fewer; stamens generally few; fruitlets much compressed, rough or beset with short stiff hair, terminated by the recurved style.

Widely dispersed, particularly on moist places.

Extends through much of extratropic Australia, as also to Europe, North-Africa and West-Asia.

Species-name from the smallness of the flowers.

MYOSURUS.

Dillenius, catalogus plantarum sponte circum Gissam nascentium 106, t. 4 (1719); Vaillant, acta academiæ Parisiensis 1719, p. 133.

Represented in several parts of the globe, but as far as known only by two species.

Mousetail-plant, literal translation of the Greek name.

SPECIES:

Myosurus minimus.

Linné, species plantarum 284 (1753).

Dwarf, annual, smooth, stemless; leaves linear or upwards dilated, undivided, toothless; flowerstalks (or peduncles) thread-like, each with a small upright flower; petals shorter than the calyx, their base exceedingly narrow; fruit axis very slender; fruitlets extremely minute, terminated by the very short style.

In wet places near the Rivers Hopkins, Emu-Creek, Avoca, Western Avon, Richardson, Wimmera and Murray.

Extends in Australia as far as known to the Rivers Darling, Edwards and Murrumbidgee; known also from most parts of Europe, West-Asia, North-East America and North-Africa.

CLEMATIS.

Ruppius, flora Jenensis 62 (1718).

Represented in many parts of the globe, but within the tropics chiefly on high mountains. Name ancient, from the Greek, in allusion to the twisting branches.

SPECIES:

Clematis aristata.

R. Brown; Candolle, regni vegetabilis systema naturale i. 147 (1818).

Climbing; leaves on mostly twisted stalks, divided into generally 3 lanceolate- or cordate-oval thick acute and stalked segments with or without teeth; peduncles with 1 or more flowers; staminate and pistillate flowers on different plants; sepals 4, pure- or yellowish-white, twice or three times as long as the stamens; anthers oblong-linear, terminated by an awlshaped appendage; fruitlets generally downy, not wrinkled; their style very long, feathery.

In forest-valleys and along wooded river-banks.

Extends to New South Wales and Tasmania and in a peculiar variety to West Australia.

The species-name alludes to the pointed anthers.

Clematis microphylla.

Candolle, regni vegetabilis systema naturale i. 147 (1818).

Climbing; leaves on mostly twisted stalks, divided into generally doubly threefold linear- or oval-oblong blunt and teethless segments; peduncles with one or more flowers; staminate and pistillate flowers on different plants; sepals 4, yellowish-white, nearly three times as long as the stamens; anthers small, oval, without any appendage; fruitlets thick and wrinkled at the margin; fruit-style very long, feathery except the base.

Along the sea-coast and near it; also in the desert-tracts; a variety with very narrow segments of the leaves on the Mitta-Mitta and Snowy Rivers.

Extends through the greater part of extratropic Australia, also Tasmania.

The species-name signifies the smallness of the leaf divisions.

CALTHA.

Ruppius, flora Jenensis 119 (1718).

Represented by a few species in the colder regions both of the north- and south-hemisphere. Name abbreviated from a Greek word, in allusion to the shape of the flowers, basket-like in miniature. The genus is combinable with Trollius of C. Gesner.

SPECIES:

Caltha introloba.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 98 (1855).

Dwarf, perennial, smooth, stemless; leaves oval-halberdshaped, shining, their two long basal lobes inflexed on to the surface of the lamina, the margin otherwise entire; stalks with one flower; sepals 5–8, white, lanceolate-linear; fruitlets 5–9, free, their style on the apex recurved; seeds 3–4.

On snowy springs in the highest regions of the Australian Alps.

Extends to Tasmania and New South Wales.

Species-name from the lobes of the leaves bent inward as in a few South American and one New Zealand species.

NYMPHÆACEÆ.

Salisbury, in Kœnig and Sims's Annals of Botany ii. 70 (1805).—Name from the leading genus of the order, Nymphæa, comprising the majority of the Waterlilies.

GENUS:

Cabomba: Sepals and petals 3–4, free, persistent. Stamens 6 or more, inserted beneath the ovaries. Ovules 2 or 3. Fruitlets 2–18, disconnected. Seeds albuminous.—Water plants; their submerged parts invested with mucilage; flowers comparatively small.

CABOMBA.

Aublet, histoire des plantes de la Guiane francaise i. 321, t. 124 (1775).

In a few species scantily scattered through both Americas, India, China, Japan, Africa and East Australia, as far as hitherto ascertained. —The name is a vernacular one in Guiana.

SPECIES:

Cabomba peltata.

Brasenia peltata, Pursch, flora Americæ septentrionalis ii. 389 (1814).

Leaves all floating, oval, undivided, fixed at the centre to their stalk; petals purplish; stamens 12–36; anthers linear, bursting along the margin; stigmas long-decurrent; fruitlets 4–18; seeds smooth.

In the Rivers Campaspe, Murray, Hume, Mitta-Mitta and in the adjoining lagoons.

Extends to New South Wales and Queensland, also North-America, South- and East-Asia and tropical Africa.

The species-name expresses the singular mode in which the leaf is affixed.

DILLENIACEÆ.

Salisbury, paradisus Londinensis i. 73 (1806).

Name from the typical Asiatic genus Dillenia, dedicated by Linné to Dr. Dillenius of Darmstadt, from 1728 till 1747 Director of the Botanic Garden of Oxford, especially famed as being one of the first who studied the mosses closely.

GENUS:

Hibbertia: Sepals and petals 5. Stamens indefinite; filaments capillary, not conspicuously dilated at the summit. Cells of the anthers parallel, contiguous, generally elongated. Fruitlets bursting longitudinally.—Shrubs or hardly woody plants, rarely climbers, never trees. Petals yellow.

HIBBERTIA.

Andrews, Botanist's Repository, t. 126 (1800).

Represented throughout Australia, seemingly in aberrant forms also in Madagascar, not in New Zealand, but perhaps in New Guinea.—Name in honor of George Hibbert of the Botanic Garden of Clapham.

SPECIES:

Hibbertia dentata.

R. Brown; Candolle, regni vegetabilis systema naturale i. 426 (1818).

Stem tall, trailing or climbing; leaves large with conspicuous stalks, oval, more or less toothed; flowerstalks solitary, as long as the calyx

or longer, with bracts at the base; stamens very numerous, all round the pistils, with some antherless filaments outside; ovaries generally 3, smooth; fruitlets with 3–5 seeds; appendage glutinous, about as long as the seeds, fringed.

In the forest-regions of the most eastern part of Gippsland.

Extends through the coast-regions of New South Wales into the southernmost parts of Queensland.

Hibbertia Billardieri.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 14 (1860).

Stems erect or somewhat climbing; leaves oval or verging into an oblong or linear form, recurved at the margin; stalks as long as the flowers or longer; stamens 3–25, unilateral; filaments all fertile, sometimes connate; ovaries 2, velvet-downy; fruitlets with 1 or 2 seeds; appendage exceeding half the length of the seeds, membranous, often jagged.

In swampy thickets particularly of the forest-regions, rarer in dry rocky ground.

Extends to the eastern part of South Australia, to Tasmania, New South Wales and South-Queensland.

Hibbertia densiflora.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 15 (1860).

Stems short, erect or ascending; leaves linear- or lanceolar-oblong, recurved at the margin; flowers almost sessile, several together on the summit of the branchlets surrounded by copious leaves, seldom solitary; sepals silky-hairy; stamens unilateral, all fertile, 7–20; ovaries 2, velvet-downy; fruitlets with 2 or 3 seeds; appendage less than half as long as the seed, succulent, not jagged.

On rocky sandy or bushy ridges.

Extends to the eastern part of South Australia, to Tasmania and the southern part of New South Wales.

Hibbertia stricta.

R. Brown; Candolle, regni vegetabilis systema naturale i. 422 (1818).

Leaves linear, almost blunt, with repressed margin; flowers generally sessile or shortstalked; stamens 5 to 20, unilateral, all fertile; ovaries 2–3, velvet-downy; fruitlets with 1 or 2 seeds; appendage membranous, about half as long as the seed.

On sandy rocky or bushy places, as well of the lowlands as the hills.

Extends through a great part of extratropic Australia.

Species-name in contrast to the diffuse growth of many other congeners.

Hibbertia humifusa.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 16, suppl. plate i. (1860).

Procumbent, hairy; leaves linear, almost acute, with revolute margin; flowerstalks slightly longer than the calyx, without real bracts; stamens 6–9, unilateral, all fertile; ovaries 2, velvet-downy; fruitlets with 4–6 seeds; appendage membranous, less than half as long as the seeds, not deeply jagged.

About the Grampians.

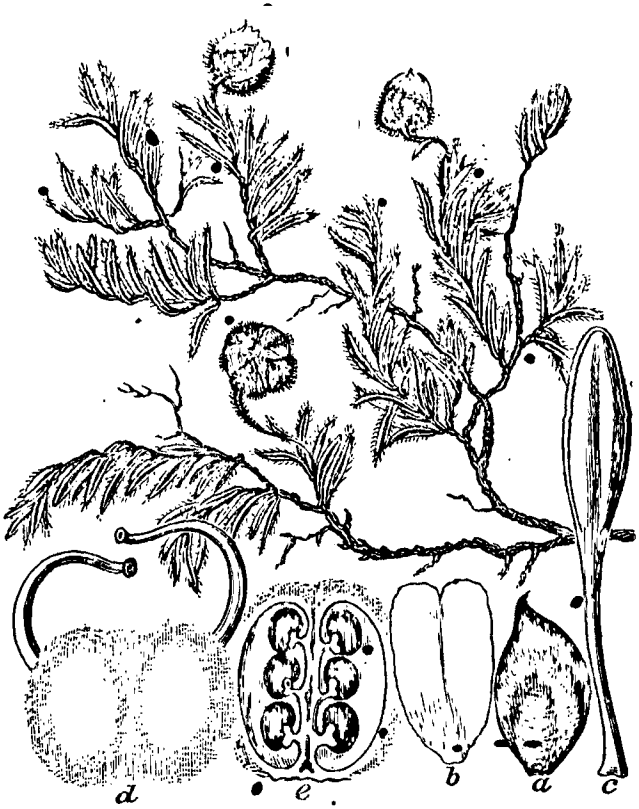


FIG. 2.—*a*, sepal; *b*, petal; *c*, stamen; *d*, fruit; *e*, longitudinal section of fruit; all enlarged.

Hibbertia serpillifolia.

R. Brown; Candolle, regni vegetabilis systema naturale i. 430 (1818).

Leaves small, oval- or oblong-linear, with repressed margin; flowerstalks as long as the calyx or shorter, without bracts; stamens 8–15, all round the pistils and all fertile; ovaries 3, velvet-downy; fruitlets with 1–3 seeds; appendage less than half as long as the seed, membranous.

In the higher mountain regions.

Extends to Tasmania and New South Wales.

Species-name from some resemblance of the leaves to those of one of the European and Asiatic Thymes (Thymus Serpillum of Linné).

Hibbertia acicularis.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 17 (1860).

Procumbent; leaves linear, smooth, pungent, acute, with repressed margin; flowerstalks as long as the calyx or longer, with bracts; stamens 5–8, unilateral, all fertile; ovaries 1–2, velvet-downy; fruitlets with 1 or 2 seeds; appendage membranous, not jagged.

On heaths, particularly of the coast-regions.

Extends to Tasmania, New South Wales and South-Queensland.

Hibbertia diffusa.

R. Brown; Candolle, regni vegetabilis systema naturale i. 429 (1818).

Leaves oval or oblong, with wedge-shaped base, often crowded into separate tufts, flat or somewhat recurved at the margin, sometimes toothed at the summit, of equal color on both pages; flowers sessile, terminal, solitary, without conspicuous bracts; stamens numerous, all round the pistils and all fertile; ovaries 2–4, smooth; fruitlets with one seed; appendage of less than half the length of the seeds, fringed.

On wooded mountains from near Port Phillip and the tributaries of the Murray-River to Gippsland.

Extends to New South Wales and South-Queensland.

Hibbertia angustifolia.

Salisbury, paradisus Londinensis 73 (1806).

Prostrate, generally smooth; leaves linear, acute, channelled, beneath convex, the margin flat or incurved; flowers solitary, sessile; bracts small; stamens numerous, all fertile; filaments short, partly or slightly connected into bundles, all round the pistils; ovaries 3–5, smooth; fruitlets with 2–5 seeds; appendage about half as long as the seeds, succulent.

In Gippsland, rarely further westward.

Extends to Tasmania.

Species-name from the narrowness of the leaves. ..

Hibbertia fasciculata.

R. Brown; Candolle, regni vegetabilis systema naturale i. 428 (1818).

Hairy; leaves short, narrow-linear, acute, mostly crowded into tufts, channelled, beneath convex, the margins often incurved; flowers solitary, sessile; bracts small; stamens 8–12, all round the pistils and all fertile; ovaries mostly 3, smooth; fruitlets with 1 or 2 seeds; appendage more than half as long as the seed, fringed.

In the southern chiefly heathy regions.

Extends to Tasmania and New South Wales.

Hibbertia virgata.

R. Brown; Candolle, regni vegetabilis systema naturale i. 428 (1818).

Smooth, robust, oftener erect than prostrate; leaves linear, rather blunt, the margins incurved; flowers solitary, sessile; bracts broad, scarious; stamens 7–20, often somewhat fascicled, all round the pistils and all fertile; ovaries mostly 3, smooth; fruitlets with 1 or 2 seeds; appendage more than half as long as the seeds, fringed.

In the northern and chiefly the desert-regions; rare in Gippsland.

Extends far inland into South Australia and New South Wales, but scantily to Tasmania.

The distinctions between this and the two preceding species are very faint.

Species-name from the twiggy habit.

MAGNOLIACEÆ.

J. St. Hilaire, exposition des familles naturelles ii. 74, t. 83 et 84 (1805).

Name from the leading genus Magnolia, consecrated by Plumier to the celebrated physician Dr. Pierre Magnol, the preceptor of Tournefort, one of the founders of natural classification of plants at the end of the seventeenth century, and then also Director of the Botanic Garden of Montpellier.

GENUS:

Drimys: Sepals 2 or 3, at first connate. Petals 2–24. Stamens with short and broad filaments and with distinct anther-cells, slit at the outer side. Ovaries 1–11; when several disposed in one row. Ovules numerous. Stigmas almost sessile. Fruitlets often succulent, at last bursting irregularly. Foliage evergreen; flowers comparatively small, on conspicuous stalklets.

DRIMYS.

R. et G. Forster, characteres generum 83, t. 42 (1776).

Represented sparingly in East Australia, New Zealand, the Alps of Borneo and South America; also in New Caledonia, as far as hitherto ascertained. Name in allusion to the acridity of these plants.

SPECIES:

Drimys aromatica.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 20 (1860).

Leaves thick, gradually narrowed into the stalk, ovate or oblong-lanceolar, not grey beneath; flowerstalk short or none; sepals 2, almost disconnected; petals 2–8; stamens 9–25; anther-cells finally divergent; ovaries 1–11; stigma decurrent; berries globular.

Scattered through the denser forests; abundant in our alpine regions.

Extends to Tasmania and New South Wales.

The Peppertree of our colonists.

ANONACEÆ.

A. L. de Jussieu, genera plantarum 283 (1789), from B. de Jussieu (1759).

Name from Sloane's American genus Anona, but the word of Malayan origin.

GENUS:

Eupomatia: Calyx valveless, almost egg-shaped, opening by circumcision near the base. Petals none. Fertile stamens exterior, inserted above the base of the calyx. Filaments dilated towards the connate base. Anthers pointed. Sterile stamens petal-like, numerous, connivent, overlapping in bud, concrete at the base with the fertile stamens. Stigmas sessile. Fruit connate with the persistent part of the calyx, thus urnshaped or broad inverted-conical, many-celled. Seeds 1–3 in each cell.—Shrubs, rarely trees; leaves scattered; flowers solitary.

EUPOMATIA.

R. Brown, in Flinders' voyage ii. 597, t. 2 (1814).

Represented by two known species, restricted to East-Australia.—Name from the Greek, in allusion to the lid-like calyx.

SPECIES:

Eupomatia laurina.

R. Brown, in the work above quoted.

Tall, sometimes arboreous; leafstalks somewhat decurrent along the branchlets; flowerstalks lateral or almost axillary; antherless stamens bent inward, shorter than the fertile stamens; fruit broadly urnshaped.

On the Genoa-River.

Extends to New South Wales and Queensland.

MONIMIEÆ.

A. L. de Jussieu, Annales du Muséum xiv. 30 (1809).

Name from Aubert du Petit-Thouars' genus Monimia, which again received its appellation in reference to Queen Monime of Pontus as indicative of its affinity to Commerson's Mithridatea.

GENERA:

Hedycarya: Calyx depressed, 6–10-cleft, rarely almost entire. Anthers numerous, sessile; their cells parallel, slit longitudinally. Ovaries numerous. Ovule pendent. Style scarcely developed. Fruitlets free, hard, somewhat succulent outside. Embryo axillar. Radicle superior. Cotyledons denticulated.—Trees; leaves toothed; stalks with several flowers; staminate and pistillate flowers on different plants.

Atherosperma: Calyx 8- rarely 10-cleft. Stamens numerous. Filaments short, with two appendages at the base. Anthers opening by ascendant valves, the connective not extending long beyond the cells. Ovaries numerous. Style long, plumose. Ovule erect. Fruitlets dry, concealed in the finally enlarged and cupshaped calyx. Embryo minute, basal. Radicle inferior.—Aromatic trees; leaves serrated; flowers unisexual.

HEDYCARYA.

R. et G. Forster, characteres generum 127, t. 64 (1776).

Represented also in East-Australia, New Zealand and Polynesia.—Name from the Greek, indicating the sweetness of the fruit of the first discovered species.

SPECIES:

Hedycarya Cunninghami.

Tulasne, in Archives du Muséum d'histoire naturelle viii. 408 (1855).

Leaves broad-lanceolar, acuminate, of thick consistence, serrated; racemes axillary; calyx with deep dentation; connective of the anthers much narrower than the cells, not dilated towards the summit; fruitlets small, sessile, yellow.

Through our eastern damp forest-valleys, especially among ferntrees.

Extends to New South Wales.

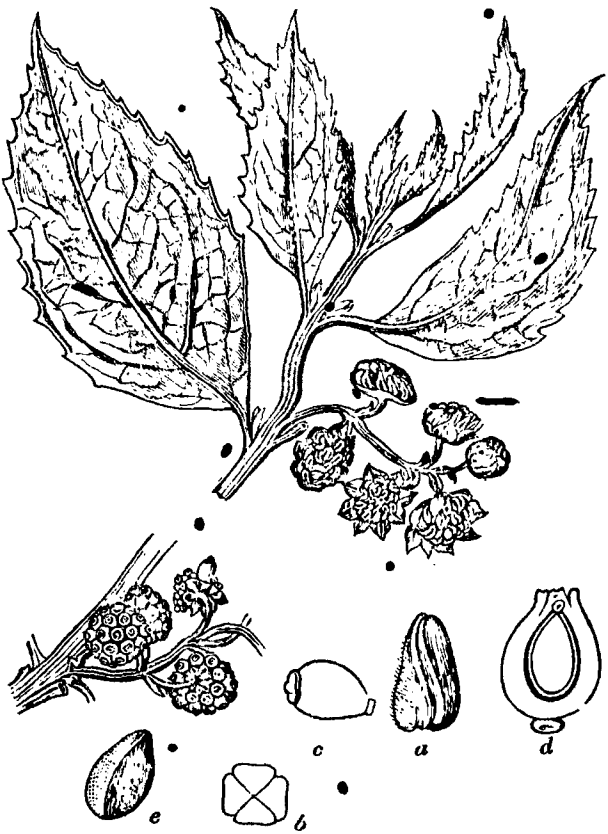


FIG. 3. — *a*, anther; *b*, a pollen-grain; *c*, a fruitlet; *d*, longitudinal section of a fruitlet; *e*, a seed.

ATHEROSPERMA.

Labillardière, Novæ Hollandiæ plantarum specimen ii. 74, t. 224 (1806).

Scantily represented beyond South-East Australia, also in New Zealand and Chili.—Name of Greek derivation, signifying the Clematis-like style terminating the fruitlets.

SPECIES:

Atherosperma moschatum.

Labillardière in the work mentioned.

Leaves of thick consistence, pale beneath; flowers singly on their stalk, the staminate and pistillate flowers mostly on the same plant; bracteoles thick, coherent with each other at the contiguous margin, enclosing the flower while in bud; calyx large; its lobes forming two rows, dropping in age from the pistillate flower; stamens 8–20, rarely more; fruitlets small, downy.

In our deepest and most springy ferntree gullies.

Extends to Tasmania and the most southern parts of New South Wales.

Local colonial name, Sassafras-tree, in allusion to slightly similar aromatic properties of the original laurinaceous deciduous Sassafras-tree of North America, the name itself changed from the Spanish Salsafras, vernacular for the Saxifragas. Labillardière's specific appellation alludes to the fragrance of the tree, reminding of that of nutmegs.

LAURACEÆ.

Ventenat, tableau du règne vegetal ii. 245 (1799).

Name from the typic genus of the order, Laurus, that of the European Bay-tree, the triumphal laurel of the ancients.

GENUS:

Cassytha: Lobes of the calyx six, persistent; the three inner the largest. Outer stamens 6, all fertile or rarely 3 sterile; inner stamens 6, half of them sterile; anthers with two valves. Style short; stigma undivided. Fruitlet enclosed in the enlarged tube of the calyx. Cotyledons in age concrescent. Twining parasitic plants; leaves reduced to bract-like scales; flowers minute, each with one bract and two bracteoles.

CASSYTHA.

Osbeck, according to Linné, species plantarum i. 35 (1753).

Represented chiefly in Australia, scantily extending to South Asia, Africa and tropic America. Name from Kathytas, Theophrastos's appellation for one of the habitually similar Dodder-plants (Cuscuta Epithymum of Murray, or C. minor of Bauhin).

SPECIES:

Cassytha glabella.

R. Brown, prodromus floræ Novæ Hollandiæ 404 (1810).

Dwarf, glabrous; stems and branches threadlike; flower-clusters globular, stalked; calyx white, very small; fruit oval, succulent, red or yellow.

Among bushes and herbs in scrub-land not rare.

Extends through most parts of Australia.

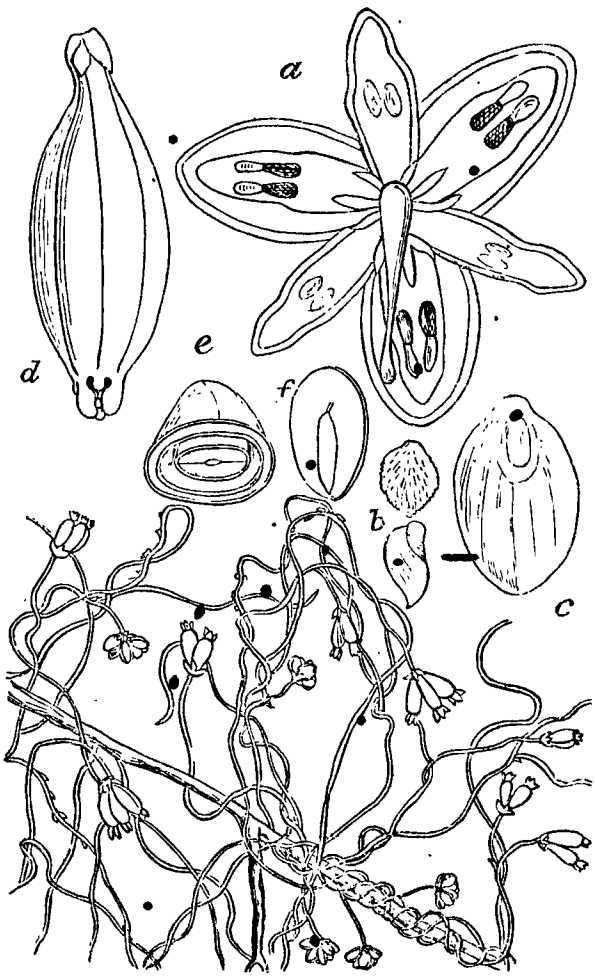


FIG. 4.—*a*, flower-head; *b*, bracteoles and outer lobes of the calyx; *c*, inner lobes of the calyx; *d*, fruit enclosed in the calyx; *e*, transverse section of a fruit; *f*, view of embryo.

Cassytha pubescens.

R. Brown, prodromus floræ Novæ Hollandiæ 404 (1810).

Young portions of the plant downy; flower-clusters globular or extending into spikes, short-stalked; fruit sphærical or almost pear-shaped, downy.

Frequent on bushes in many parts of the colony.

Extends through many tracts of extratropic Australia.

Cassytha melantha.

R. Brown, prodromus floræ Novæ Hollandiæ 404 (1810).

Tall; stems and branches thick; spikes short-stalked, sometimes reduced to clusters; calyx comparatively large, often downy; fruit globular, rather large, green.

As well in forests as on coasts and desert-lands, of sparse occurrence.

Species-name from the often black hair of the flowers.

Extends widely but not copiously through extratropic Australia.

MENISPERMEÆ.

A. L. de Jussieu, genera plantarum 284 (1789).

Name from the genus Menispermum, established already in 1705 by Tournefort, and called so from the crescentshaped inner part of the fruit.

GENERA:

Sarcopetalum: Sepals 2–6, free. Petals 3–6, longer than the calyx, very turgid, of fleshy consistence. Stamens 2–4; filaments below the free summit connate; anthers divergent; their cells almost parallel, slit longitudinally. Ovaries 3–6. Stigmas two-lobed rarely three-lobed, finally nearly basal. Fruitlets compressed, roundish; the inner fruitshell with an ample lateral impression. Seed with albumen. Embryo cylindrical; cotyledons arched, nearly as long as the radicle, not divergent. Woody climber; flowers in racemes.

Stephania: Sepals of staminate flowers 6–10, of pistillate flowers 3–5, all free. Petals 3–5, shorter than the calyx, of fleshy consistence. Stamens entirely connate; the column dilated at the summit and girded by 6–8 horizontal one-celled anthers. Ovary one. Stigmas 3–6, finally nearly basal. Fruitlet compressed, roundish; the inner fruitshell with an ample lateral impression; seed with albumen. Embryo cylindrical, curved into a horseshoe form; cotyledons nearly as long as the radicle, not divergent.—Woody climbers; petiole (leafstalk) fixed above the undivided base of the leaves; flowers in compound or paniculate umbels.

SARCOPETALUM.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 26, supplemental plate iii. (1860).

Represented as far as known in East-Australia solely. Name from the Greek, in allusion to the consistence of the petals.

SPECIES:

Sarcopetalum Harveyanum.

F. v. Mueller, in the work above mentioned.

Leaves heartshaped, shining on both pages, as well as the branches glabrous; racemes with minute bracts, slightly downy; sepals acute, extremely small; petals livid; fruit black; inner fruitshell very rough at the back.

From the Snowy-River to the Genoa in forest-valleys.

Extends to New South Wales and Queensland.

This, the only known species, was dedicated to Dr. W. H. Harvey, F.R.S., at the time when that distinguished man visited Australia for the local study of its oceanic Algæ.

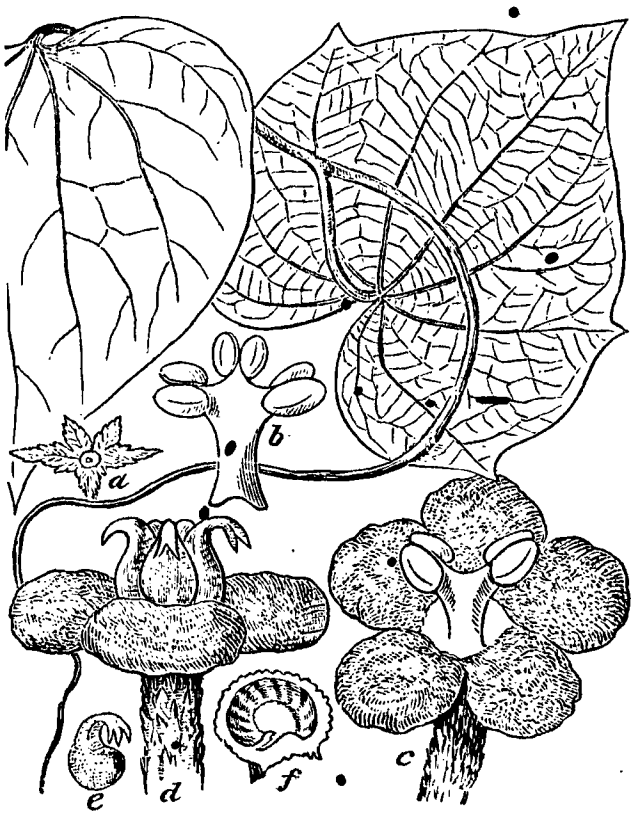


FIG. 5. — *a*, calyx; *b*, stamens; *c*, staminate flower; *d* pistillate flower; all much magnified; *e*, pistil; *f*, longitudinal section of fruitlet slightly magnified.

STEPHANIA.

Loureiro, flora Cochinchinensis ii. 608 (1790).

Represented in East- and North-Australia, the warmer parts of Asia and of Africa, also in Polynesia.

Name from the Greek, in allusion to the crown-like united anthers.

SPECIES:

Stephania hernandifolia.

Walpers, repertorium botanices systematicæ i. 96 (1842).

Leaves ovate-roundish, gradually narrowed into an acute apex, glabrous above, beneath grey and short-downy; flowers closely crowded into clusters on the ultimate flowerstalks; sepals blunt, extremely small; fruit red; inner fruitshell very rough at the back.

On the Genoa-River.

Extends through East- and North-Australia, South-Asia as far as Japan, and also part of Africa and Polynesia.

Species-name from the resemblance of the leaves to those of an Hernandia, which latter genus again was dedicated by Plumier to Dr. F. Hernandez, physician to Phillip II., and also scientific explorer of West-India and Mexico.

PAPAVERACEÆ.

A. L. de Jussieu, genera plantarum 235 (1789), from B. de Jussieu (1759).

GENUS:

Papaver: Sepals 2 rarely 3, overlapping in bud. Petals normally 4 rarely 6. Stamens numerous. Stigmas 4 or more, adnate to the orbicular or broad-conical summit of the ovary, linear-cylindrical, radiating. Ovary imperfectly septate by the parietal placental plates; ovules very numerous. Fruit opening under the terminal disk, otherwise indehiscent. Seeds without appendage. — Herbs; leaves often lobed; flowerstalks elongated; flowers showy, fugacious, solitary, drooping in bud.

PAPAVER.

Tournefort, institutiones rei herbariæ 237, t. 119 (1700). Poppy.

Widely represented in the northern hemisphere; in the southern only by our species, as far as hitherto known.

The name occurs already in the works of Livius and other ancient Roman writers.

Papaver aculeatum.

Thunberg, flora Capensis 431 (1813).

Annual, bristle-hairy; petals scarlet; filaments brownish-yellow, less than half as long as the petals, not upwards dilated; anthers yellowish;

stigmas 5–9; fruit glabrous, truncate-ellipsoid, the terminal margin slightly waved; placentas reaching hardly half-ways towards the centre of the capsule; seeds brownish-black.

On sand-lands near the Murray- and Snowy-River.

Extends to some other parts of extratropical Australia and also to South-Africa.

CRUCIFERÆ.

A. L. de Jussieu, genera plantarum 237 (1789), indicated by B. de Jussieu (1759).

Name from the crosswise position of the petals.

GENERA:

Nasturtium: Sepals spreading, almost equal. Petals nearly sessile, rarely absent. Stamens free, without teeth, sometimes reduced in number. Fruit cylindrical or ellipsoid, rarely sphæroid; valves nerveless or streaked with one imperfect nerve towards the base. Seeds not so broad as the septum, forming two irregular rows in each cell, not margined. Funicles free, short. Cotyledons straight; their edges turned to the radicle and placentas.—Herbs, smooth or beset with almost simple hair; leaves often lobed; flowers small.

Barbaræa: Sepals erect, almost equal. Petals contracted into a very narrow base. Stamens free, without teeth. Fruit narrow, elongated, somewhat quadrangular; valves strongly 1-nerved. Funicles free. Seeds nearly as broad as the septum, forming one row in each cell, not margined. Cotyledons straight; their edges turned to the radicle and placentas.—Smooth herbs; leaves often lobed; their base usually with appendages; petals yellow.

Arabis: Sepals equal, the inner ones turgid at the base. Petals usually protracted into a narrow base. Stamens free, without teeth. Fruit narrow, elongated, towards the septum compressed; valves 1-nerved. Seeds not so broad as the septum, forming one, rarely two rows in each cell, frequently margined. Cotyledons straight; their edges turned to the radicle and placentas.—Herbs, smooth or beset with branched hair; petals usually white.

Cardamine: Sepals almost equal. Petals protracted into a narrow base, rarely absent. Stamens free, without teeth, rarely 4. Fruit towards the septum compressed, linear, seldom lanceolar; valves nerveless or faintly nerved towards the base. Seeds forming one row, seldom two irregular rows in each cell, not margined. Cotyledons straight; their edges turned to the radicle and placentas.—Herbs, often glabrous; petals white or purplish, never yellow.

Sisymbrium: Sepals mostly equal and spreading. Petals protracted into a narrow base. Stamens free, without teeth. Fruit nearly cylindrical or slightly compressed; valves often 3-nerved. Seeds forming one row or seldom two irregular rows in each cell, not margined.

Cotyledons straight; their edges turned to the septum; the radicle facing the sides of the cotyledons.—Herbs, rarely half-woody plants, glabrous or beset with usually simple hair; leaves often lobed and with clasping base; petals much oftener yellow than white.

Wilckia: Sepals erect, the inner ones often turgid at the base. Petals protracted into a long narrow base. Stamens without teeth, free, or the longer ones connate. Stigmas erect. Fruit cylindrical, pointed; valves 3-nerved. Seeds forming one row or seldom two irregular rows in each cell, not margined. Cotyledons straight; their edges turned to the septum; the radicle facing the sides of the cotyledons.—Downy herbs; petals white or purple; fruitstalks stout.

Erysimum: Sepals erect, almost equal or the inner ones turgid at the base. Petals protracted at the base. Stamens free, without teeth. Fruit somewhat or much elongated; valves 1-nerved, seldom almost nerveless. Seeds forming one row or seldom two irregular rows in each cell, not or imperfectly margined. Cotyledons straight; their edges turned to the septum; the radicle facing the sides of the cotyledons.—Herbs, generally beset with branched hair; leaves often lobeless, never with clasping base; petals much oftener yellow than white.

Capsella: Sepals almost equal, often spreading. Petals somewhat protracted at the base. Stamens free, without teeth. Fruit short, from ellipsoid to triangular-heartshaped, transversal to the narrow septum compressed; valves with or without a terminal appendage. Seeds often more than two in each cell, not margined. Radicle facing the sides of the cotyledons.—Smooth or hairy herbs; petals white or pink.

Menkea: Sepals spreading, almost equal. Petals somewhat protracted at the base. Stamens free, without teeth. Fruit short, from elliptical to globular; valves 1-nerved. Septum obliterated. Seeds numerous, minute, on long funicles, not margined. Radicle facing the sides of the cotyledons.—Annual herbs; leaves scarcely lobed; petals white or pink.

Geococcus: Sepals spreading, almost equal. Petals somewhat protracted at the base. Stamens free, without teeth. Fruit short, elliptical, bilobed at the base; valves 1-nerved. Septum present. Seeds few, on elongated funicles, not margined. Radicle facing the sides of the cotyledons.—Stemless annual herb; leaves deeply lobed; fruits fascicled at the root, often buried.

Lepidium: Sepals almost equal. Petals somewhat protracted at the base, rarely wanting. Stamens free, without teeth, sometimes reduced to 4 or 2. Fruit short, from oval to heartshaped, often bilobed at the summit, transversal to the very narrow septum compressed. Seeds 1 rarely 2 in each cell, not margined; funicles free, terminal. Cotyledons straight, parallel to the septum. Radicle facing the sides of the cotyledons or in very rare cases the edges.—Herbs or half-woody plants; petals white.

Stenopetalum: Sepals coherent, erect, unequal at the base. Petals protracted into a long narrow acumen, coiled before expansion. Stamens free, without teeth. Fruit from narrow-ellipsoid to globular; septum broad. Funicles short. Seeds forming two rows in each cell, or few, not margined. Cotyledons straight; their edges turned to the septum; the radicle facing the sides of the cotyledons.—Herbs often annual; leaves not clasping; petals yellowish or orange-colored, seldom white.

Alyssum: Sepals almost equal. Petals protracted into a long narrow base, entire or bilobed. Stamens free, without or with teeth or appendages. Fruit from ellipsoid to orbicular, towards the septum compressed. Funicles short. Seeds 1 or 2 or rarely more in each cell, sometimes margined. Cotyledones straight; their edges turned to the radicle and placentas.—Herbs or half-woody plants, mostly beset with branched hair; leaves lobeless; petals white or yellow.

Cakile: Sepals erect; the inner ones turgid at the base. Petals protracted into a long narrow base. Stamens free, without teeth. Fruit consisting of two parts, separated by transverse articulation, both 1-celled, indehiscent, 1-seeded, or the lower seedless; the upper seceding at maturity. Radicle facing the edge of the cotyledons.—Succulent annual saline herbs; petals purplish or white.

NASTURTIUM.

R. Brown, in W. T. Aiton's hortus Kewensis, second edition, iv. 110 (1812).

Represented in various parts of the globe. Name occurring already in the writings of Plinius, changed from Nasitortium, but there applied to a cress-like plant.

SPECIES:

Nasturtium terrestre.

R. Brown, as mentioned above.

Leaves deeply pinnately divided into oval or oblong lobes, sometimes merely toothed, with appendages at the base; petals about as long as the calyx, yellow; style short; fruits ellipsoid, turgid, blunt, about as long as their stalk or shorter; seeds yellowish-brown, closely dotted.

Around swamps, lakes and along the banks of rivers in many localities.

Extends to many countries both in the northern and southern temperate and cold zones.

BARBARÆA.

Beckmann, lexicon botanicum 33 (1801).

Represented in many parts of the globe, but not in low tropical countries. Name in memory of the Martyress Barbara, about the year 236 slain in Bithynia for the sake of Christianity.

SPECIES:

Barbaræa vulgaris.

R. Brown, in W. T. Aiton's hortus Kewensis, second edition, iv. 109 (1812).

Lower leaves pinnatisected, with a large roundish terminal lobe; upper leaves almost oval or rhomboid or somewhat wedgeshaped, toothed or short-lobed; flowerstalks crowded; sepals rather large; fruits erect or slightly spreading, linear, compressed-quadrangular.

On mountain-streams of Gippsland, also found at the Hopkins- and Hume-River.

Extends to Tasmania, New South Wales and New Zealand, and beyond Australia over Europe, temperate and alpine Asia and part of North America.

ARABIS.

A. v. Haller, enumeratio methodica stirpium Helvetiæ ii. 561 (1742).

Richly represented in Europe and extratropical Asia, more scantily in America. The name by Dioscorides alludes to an Arabic plant, perhaps of an allied genus.

SPECIES:

Arabis perfoliata.

Lamarck, encyclopédie méthodique i. 219 (1783).

Lowest leaves rough-downy; stem-leaves from an arrowshaped base oval- or oblong-lanceolar, glabrous, glaucous and mostly toothless; ultimate flowerstalks nearly erect; petals yellowish-white; fruits erect, many times longer than their stalklets; seeds with a narrow border.

Along streams in the lower parts of the Australian Alps.

Extends to New South Wales and widely through the cold and temperate zones of the northern hemisphere.

Species-name from the clasping stem-leaves.

CARDAMINE.

Tournefort, institutiones rei herbariæ 224, t. 109 (1700).

Represented in all temperate and cold countries. Name slightly changed from that given by Dioscorides to an Erucaria, considered of value in heart-diseases.

SPECIES:

Cardamine stylosa.

Candolle, regni vegetabilis systema naturale ii. 248 (1821).

Glabrous, perennial; stem long; leaves oblong-lanceolar, sessile, arrowshaped at the base, remotely and minutely toothed; racemes soon elongated; petals rather small, less than half exserted; anthers yellow;

style rather long; fruits very spreading; several times longer than their stalklets; funicles toothlike; seeds dark-brown, densely reticulated outside.

In damp forest-valleys.

Extends to Tasmania, New South Wales, South-Queensland and New Zealand.

Cardamine dictyosperma.

Hooker, Journal of Botany i. 246 (1834).

Glabrous, perennial; stem long; lower leaves pinnatisected; upper leaves lanceolar or almost linear, toothed, jagged or undivided; racemes soon elongated; petals rather large, more than half exserted; anthers yellow; fruits about twice as long as their stalklets; funicle thread-like; seeds black or very dark-brown, grossly reticulated outside.

In springy forest-regions, ascending to alpine elevations.

Extends to New South Wales and Tasmania, reappears in West-Australia.

Species-name from the netty outer membrane of the seeds.

Cardamine laciniata.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria i. 34 (1854).

Glabrous, perennial; leaves all stalked, from lanceolar to linear, jagged or pinnatifid, seldom quite entire or oval; lobes mostly narrow; flowers small; petals not much longer than the calyx; stamens generally 4 only; anthers yellow; fruits twice or several times longer than their stalkets; seeds brown, smooth, when soaked mucilaginous.

On marshy meadows, often indicating somewhat saline ground.

Extends to New South Wales and South Australia.

Species-name from the jagged leaves.

Cardamine hirsuta.

Linné, species plantarum 655 (1753).

Glabrous or short-hairy, frequently annual; leaves all stalked, pinnatisected; segments from heartshaped and roundish to linear, often attenuated into a very narrow base; the terminal segment larger and occasionally this only developed; petals twice or several times longer than the sepals; stamens 6 or 4; anthers yellow; seeds brown, smooth, as broad as the septum.

In moist localities, not rare, ascending to the Alps.

Extends widely through extratropical Australia, except the desert-regions; also to all the temperate and cold regions of both the northern and the southern hemisphere.

Cardamine eustylis.

F. v. Mueller, in the Transactions of the Victorian Institute i. 114 (1855).

Glabrous; stem scarcely furrowed; leaves all stalked and pinnatisected; their lobes generally sessile, from rhombeshaped to oval, few-toothed; stalks of the stem-leaves with appendages at the base; flowers small; sepals as long the petals or longer; stamens 4 only; anthers yellow; fruits twice or several times longer than their stalklets; seeds very numerous and very minute, forming two irregular rows in each cell, brown, smooth.

On the Murray-River.

Extends sparingly thence to intratropical Australia.

Species-name from the well developed style.

SISYMBRIUM.

Tournefort, institutiones rei herbariæ 225, t. 109 (1700).

Largely represented in Europe and extratropical Asia, less numerously in extratropical Africa and America, so far as known.—Name applied by Theophrastos to the Watermint, by Nicander and Plinius to the ordinary Watercress.

SPECIES:

Sisymbrium cardaminoides.

F. v. Mueller, in the Transactions of the Philosophic Society of Vitctoria i. 34 (1854).

Annual, scantily beset with branched short hair; leaves pinnatifid or toothed or entire, the lobes of the lowest leaves rather broad; petals white, oval, with narrow base, twice as long as the calyx; style short; fruits cylindrical, twice or thrice as long as their stalklets; valves 1-nerved; seeds forming two irregular rows, when soaked mucilaginous.

On sand-ridges on the Murray-River and Glenelg-River.

Extends to New South Wales and South Australia.

Sisymbrium nasturtioides.

F. v. Mueller, in the Transactions of the Victorian Institute i. 115 (1855).

Annual, glabrous; leaves pinnatisected, seldom simply linear; petals spathular, not much longer than the sepals, as well as these yellow; anthers cordate ovate; fruits rather short, on capillary stalklets of equal or less length; valves 1-nerved; seeds smooth, forming two irregular rows in each cell, much narrower than the septum.

On the Murray-River.

Extends to New South Wales and South Australia.

Sisymbrium trisectum.

F. v. Mueller, in the Transactions of the Victorian Institute i. 114 (1858).

Glabrous, somewhat woody; leaves mostly trisected; their segments and some of the leaves linear, not often cleft; petals orbicular, white, not much longer than the sepals; anthers halberdshaped-linear; fruits twice or thrice as long as their stalklets; valves 1-nerved; seeds smooth, forming one irregular row in each cell, somewhat narrower than the septum.

On dry lands on the Murray-River, particularly in the limestone-formation.

Extends to New South Wales and South Australia.

WILCKIA.

Scopoli, introductio ad historiam naturalem 317 (1777).

Represented in the countries of and near the Mediterranean Sea. An older name for R. Brown's Malcolmia, with which genus this is identical.

SPECIES:

Wilckia Africana.

Malcolmia Africana, R. Brown in W. T. Aiton's hortus Kewensis, second edition, iv. 121.

Annual, beset with stiff partly branched hair; leaves lanceolar or almost oval, with irregular and remote teeth; sepals tardily seceding, almost equal; petals attenuated into a long narrow basis; filaments all free; stigmas decurrent along the acute broad-conical style; fruits hairy, somewhat quadrangular, rather long, on exceedingly short stalklets; seeds forming one row in each cell, narrow-oval.

On the Murray-River; Dr. Gummow.

Extends to the countries around the Mediterranean Sea, Persia and North-Western India.

ERYSIMUM.

Linné, genera plantarum 198 (1737).

Represented in Europe and extratropical Asia, more scantily in North Africa and North America. The name was applied by Theophrastos and Dioscorides to species of Sisymbrium.

SPECIES:

Erysimum brevipes.

F. v. Mueller, in Schlechtendal's Linnæa, 1852, p. 365.

Annual; leaves broad- or rhombiform-lanceolar, the lower ones jagged or pinnatifid, the upper ones toothed; flowers minute; petals white or pink, hardly longer than the sepals; style very short; stigmas very

small; fruits short, lanceolar-cylindrical, short-downy, several times longer than their stout almost erect stalklets; valves faintly 1-nerved; seeds few in each cell, smooth, narrower than the lanceolar septum, when soaked mucilaginous.

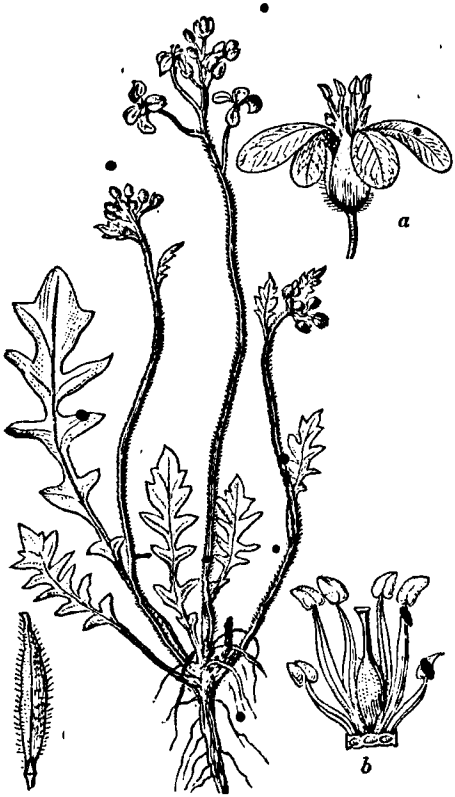
In the desert-tracts at the Murray-River.

Extends to New South Wales and South Australia.

Species-name in allusion to the short fruit-stalklets.

Erysimum lasiocarpum.

Blennodia lasiocarpa, F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 100 (1854).



Annual; leaves mostly lanceolar, toothed or pinnatifid; petals white or pink, twice or thrice as long as the sepals; style short; stigmas small; fruits very short, lanceolar-cylindrical, stiff-hairy, as long or to twice as long as their spreading stalklets; valves faintly 1-nerved; seeds few in each cell, smooth, narrower than the lanceolar septum, when soaked mucilaginous.

In the desert-regions along the Murray-River.

Extends to New South Wales, South- and West-Australia.

Species-name in reference to the hairy fruits.

Fig. 6.—*a*, flower; *b*, stamens and pistil, magnified; *c*, fruit.

Erysimum curvipes.

F. v. Mueller, in Schlechtendal's Linnæa, 1852, p. 365.

Annual; leaves lanceolar or broad-linear, toothed or some entire; petals yellow, hardly longer than the sepals; styles short; fruit short, lanceolar and almost quadrangular, about as long as their spreading

stalklets; valves strongly 1-nerved; seeds few in each cell, smooth, narrower than the lanceolar septum, when soaked mucilaginous.

In the deserts on the Murray-River.

Extends to New South Wales and South Australia.

Erysimum capsellinum.

Capsella blennodina, F. v. Mueller, Plants indigenous to the Colony of Victoria i. 42 (1860).

Perennial; leaves mostly from near the root, rhombiform- or spathulate-lanceolar, toothed or nearly entire, rarely jagged; racemes never elongated; petals white or pink, about twice as long as the sepals; fruits very short, quadrangular-ellipsoid, acute, about as long as their spreading stalklets; valves strongly 1-nerved; seeds several in each cell, shining, reticulated outside.

In subalpine elevations near the sources of the Murray-River and Snowy-River.

Extends to New South Wales.

CAPSELLA.

Medikus, Pflanzen-Gattungen 85 (1792).

Represented in many extratropic countries. Name a diminutive of a Greek and Latin word, and here applied to the form of the fruit.

SPECIES:

Capsella elliptica.

C. A. Meyer, Verzeichniss der Pflanzen vom Caucasus 194 (1831).

Annual, small, glabrous; leaves lanceolar or oval or the upper ones linear, entire toothed or pinnatifid; petals minute, hardly longer than the calyx; fruits ellipsoid- or roundish-oval, their capillary stalklets usually twice as long; valves membranous, without appendages, finally 1-nerved; septum fully thrice as long as broad; seeds rather numerous in each cell.

In boggy slightly saline places at Port Phillip and the Murray-River.

Extends to various parts of extratropic Australia and many other parts of the globe both of the western and eastern hemisphere beyond the tropics.

Capsella antipoda.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 44 (1860).

Annual, small, somewhat downy; leaves lanceolar or spathulate or rarely linear or halberdshaped, toothed or pinnatifid or pinnatisected, seldom entire; petals roundish, with long and narrow base, twice as long as the sepals; fruits turgid, ellipsoid, their capillary stalklets considerably longer; valves membranous, almost nerveless, without appendages; septum not twice as long as broad; seeds rather few in each cell.

Near Carisbrook (Whan), on Mount Macedon, in the Black Forest and on Mount Alexander.

The distinctions between this and the preceding plant, whether valid or not, have yet further to be traced.

Capsella pilosula.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 44 (1860).

Annual, small, downy; leaves lanceolar, oval or rhombeshaped, entire or toothed; fruits oval-heartshaped, compressed, their stalklets shorter and rather stout; valves comparatively thick, 1-nerved, dilated at the apex into a minute appendage; septum much longer than broad; seeds few in each cell.

On sand-lands at the Murray-River.

Extends to New South Wales, South- and West-Australia.

GEOCOCCUS.

Drummond and Harvey, in Hooker's Kew Miscellany vii. 52 (1855).

Represented in Australia solely. Name from the fruit, which ripens underground.

SPECIES:

Geococcus pusillus.

Drummond and Harvey, as above.

Lobes of the leaves triangular or semi-lanceolar; flowerstalks from near the root; petals small, oblong, with acute base; stigma sessile; fruits on conspicuous recurved stalks, penetrating the ground for maturation; seeds when moistened mucilaginous.

Near the Richardson-River and Wimmera; Dr. Curdie. On the Murray-River in sandy ground.

Extends to New South Wales, South- and West-Australia.

MENKEA.

Lehmann, index seminum horti botanici Hamburgensis 8 (1843).

Represented exclusively in Australia. Name in dedication to Dr. C. T. Menke of Pyrmont.

SPECIES:

Menkea australis.

Lehmann, as above.

Small, glabrous; leaves spatulate- or wedgeshaped-oblong, entire, or with few teeth, the majority from the root; flowers minute; petals white, oval, with acute base; stigmas almost sessile; fruits oval or ellipsoid, but slightly turgid, shorter than their stalklets or hardly as long.

In the desert along the Murray-River.

Extends to New South Wales, South Australia and West Australia.

LEPIDIUM.

Tournefort, institutiones rei herbariæ 215, t. 103 (1700).

Represented in most countries, both of the east and west hemisphere. Name that given by Dioscorides to the ordinary Garden-cress, in allusion to the scalelike form of the fruit.

SPECIES:

Lepidium foliosum.

Desvaux, Journal de botanique iii. 164 (1813).

Glabrous; leaves mostly oblong-wedgeshaped or some oval-lanceolar or linear, somewhat succulent, usually toothed towards the summit, less frequently pinnatifid, their base clasping; flowers minute; petals and all stamens developed; style very short; fruits oval, with 2 minute blunt terminal lobes, on stalkets nearly as long.

On rocky coast-declivities of Western Port.

Extends to many parts of the extratropical coast of Australia.

Lepidium ruderale.

Linné, species plantarum 645.

Tall, beset with subtle hair or glabrous, rarely spinescent; lowest leaves mostly pinnatisected, their lobes again jagged or toothed; stem-leaves from lanceolar to linear and somewhat wedgeshaped, entire or toothed, or principally the lower ones cleft; their base frequently appendiculate; flowers minute, generally without petals and only with 2 stamens; stigmas nearly sessile; fruits very small, roundish- or rhombeshaped-oval, slightly notched at the summit, on stalklets as long or nearly twice as long; valves hardly appendiculate at the apex.

Throughout most parts of the colony except the Alps.

Extends widely through extratropic Australia, carried by pastoral occupation still onwards; occurs also in the temperate parts of Europe, Asia and Africa.

The name from the predilection of this species to grow on waste places.

Lepidium papillosum.

F. v. Mueller, in Schlechtendal's Linnæa, 1852, p. 370.

Annual, not tall; stem and branches covered with very short spreading turgid almost vesicular hair; stem-leaves sessile, arrow- or halberd-shaped, the upper part oblong or lanceolar, with remote teeth; radical leaves stalked and often lobed, all usually almost glabrous; flowers minute, without petals and with 4 stamens only; stigmas sessile; fruits oval-heartshaped, on stalkets hardly as long; their terminal lobes blunt, very conspicuous, with flattened margin; moistened seeds copiously mucilaginous.

In the desert on the Murray-River.
Extends thence to the West Coast and far into Central Australia.
The species-name from the peculiar swollen hair.

Lepidium monoplocoides.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 35 (1854).

Slightly rough from depressed turgid *hair, not tall; stem-leaves* linear, without teeth and basal appendages; flowers minute, without petals and with 4 stamens only; anthers yellow; style very short; fruits roundish, on stalklets nearly as long, terminated by two acute lobes, quite surrounded by a flat margin, the terminal sinus extremely narrow; seeds narrow-bordered, when moistened very mucilaginous.
In the desert on the Murray-River.
Extends to New South Wales and South Australia.
The species-name from Bunge's now abandoned genus Monoploca, so called on account of its slightly twisted cotyledons.

Lepidium phlebopetalum.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 47 (1860).

Slightly rough, not tall; leaves linear, succulent, without teeth and basal appendages; flowers of moderate size; petals and all stamens developed; anthers purple; style rather long; fruits large, oval-roundish, on stalks of the same or lesser length, terminated by two acute lobes, broadly margined towards the apex; seeds narrow-bordered, when moistened very mucilaginous.
In the desert on the Murray-River.
Extends to South Australia and New South Wales.
Species-name from the veined petals.
Requires further comparison with L. rotundum (Candolle, regn. veg. syst. nat. ii. 537).

Lepidium leptopetalum.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 48 (1860).

Somewhat shrubby; branches slightly scabrous; leaves narrow, half-cylindrical, without teeth or basal appendages; flowers of large size; petals long, but narrow; stamens all developed; anthers yellow; style rather long; fruits large, on stalklets of nearly the same length, terminated by two conspicuous rather blunt lobes, broadly margined towards the apex, when moistened very mucilaginous.
In the deserts along the Murray-River, especially on limestone.
Extends to South Australia and New South Wales.
The species-name applies to the petals, narrow in comparison to their length.

STENOPETALUM.

R. Brown; Candolle, mémoires de muséum vii. 239 (1821).

Represented in Australia merely. Name given in reference to the narrow petals.

SPECIES:

Stenopetalum velutinum.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 49 (1860).

Velvet-downy; leaves linear, undivided, seldom toothed; flower-stalklets as long as the sepals; petals more than half exserted, yellowish; fruits broad-ellipsoid, hardly as long as their erect stalklets; valves indistinctly 1-nerved.

In the desert on the Murray-River.

Extends to the interior of New South Wales, South Australia and Southern Queensland.

Species-name from the soft and short downs of the plants.

Stenopetalum lineare.

R. Brown; Candolle, in mémoires du muséum vii. 239 (1821).

Glabrous, rarely downy; leaves linear or occasionally lanceolar, entire or with remote teeth or deeply lobed; flower-stalklets shorter than the sepals; petals about half exserted, brown-yellowish; fruits narrow-ellipsoid, considerably longer than their erect stalklets; valves distinctly 1-nerved.

On the shores of Port Phillip and Wilson's Promontory; also on sand-ground about Mount McIvor and in the deserts about the Murray-River.

Extends sparsely through a great part of extratropical Australia, particularly the desert-interior.

Stenopetalum sphærocarpum.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria i. 35 (1855).

Glabrous, not tall; leaves linear, entire or cleft into few lobes; flower-stalklets soon longer than the small sepals and bent downward; petals about half exserted, whitish; stigmas almost sessile; fruits globular, about as long as their stalklets; valves almost nerveless; soaked seeds very mucilaginous.

In the desert on the Murray-River.

Extends to New South Wales, South- and West-Australia.

Species-name from the form of the fruit.

ALYSSUM.

Linné, genera plantarum 194 (1737).

Represented almost exclusively in the extratropical parts of the northern hemisphere. Name from Dioscorides, in respect to the supposed remedial virtue of an allied Farsetia in hydrophobia.

SPECIES:

Alyssum minimum.

Pallas, Reise durch Provinzen des Russischen Reichs iii. 741 (1776).

Annual, short-hairy, not tall; leaves linear, less frequently verging into an oval form; flowers minute; petals not lobed; filaments with a tooth-like appendage; fruits flat, roundish-oval, smooth; seeds several in each cell, not margined.

In the desert on the Murray-River.

Extends sparsely over the arid regions of Australia; also through South Europe, Middle Asia as far as Songaria and North Africa.

CAKILE.

Tournefort, corollarium institutionum rei herbariæ 49, t. 483 (1703).

Represented in many countries, but rare in the southern hemisphere. The name occurs first in the writings of the ancient Arabic physician Serapion, and seems to signify the use of the plant against tumors.

SPECIES:

Cakile maritima.

Scopoli, flora Carniolica 344 (1760).

Leaves entire or lobed, often rather broad; flowers comparatively large; fruits quadrangular, spreading, on short and thick stalklets; their lower joint gradually dilated upwards, with a pendent seed; the upper joint attenuated towards the apex, with an erect seed; radicle large.

On sea-sand around Port Phillip and Western Port, also near the entrance of the Shaw- and Hopkins-River.

Extends to Tasmania, and is known from many of the sandy seashores of the northern hemisphere.

CAPPARIDEÆ.

Ventenat, tableau du règne végétale iii. 118 (1799).

GENUS:

Capparis: Sepals usually 4 and free, all or some overlapping or all disjointed in bud; or the calyx closed, undivided and finally ruptured irregularly into two valves, and with 2 or 3 additional petal-like sepals

inside. Petals overlapping before expansion. Stamens indefinite, inserted on a very short receptacle; filaments free. Ovary on a long stalk, 1- to 4-celled. Stigma sessile. Fruit with rare exceptions not dehiscent, always stalked. Seeds numerous; embryo convolute. Radicle long.—Erect or climbing shrubs or trees; leaves simple, rarely absent; stipules often thorny.

CAPPARIS.

Tournefort, institutiones rei herbariæ 261, t. 139 (1700).

The name applied already by Theophrastos and Dioscorides to the ordinary Caperplant. Represented by numerous species in most of the hotter parts of the globe.

SPECIES:

Capparis Mitchelli.

Lindley, in Mitchell's Three Expeditions into Eastern Australia i. 311 (1838).

Arboreous; leaves pale-green, oval or lanceolate, especially beneath as well as the branchlets grey velvet-downy; peduncles 1-flowered; calyx at first closed and undivided, at last longitudinally torn into halves, much contracted upwards; the 2 or 3 free inner sepals resembling the petals, but shorter; petals crisped at the margin; stamens numerous, all fertile; stalk of the ovary downy; berry large, globular, rather hard outside.

Very rare in the desert on the Murray-River.

Scattered scantily over a vast extent of the arid interior of Australia.

This species on account of its calyx might be placed in a separate genus, distinguished by Endlicher as Busbecqea and consecrated to the Belgian nobleman A. G. de Busbecq, who as ambassador of Charles

(A)

V. in Turkey first rendered known some oriental plants, and who there also carried on archæologic discoveries.

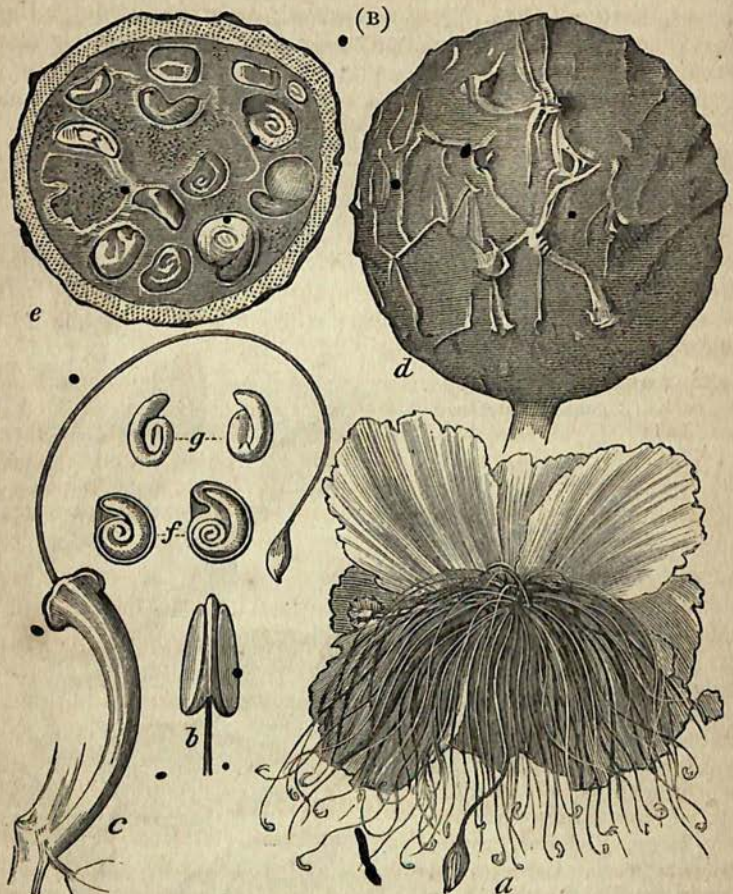


FIG. 7—(A), branch with flowerbuds. (B), *a*, flower; *b*, stamen with a portion of the filament; *c*, flowerstalk and ovary with its stalklet; *d*, fruit; *e*, fruit cut transversely; *f*, longitudinal section of seeds; *g*, embryo; all except *b* natural size.

VIOLACEÆ.

Candolle, flore francaise iv. 801 (1805).

GENERA:

Viola: Sepals generally lengthened at the base beyond the point of insertion, nearly equal. The lower petal hardly longer, but usually much protracted into a hollow base. Stamens touching each other at

their margin; the two lower usually with an appendage; filaments short. Style generally dilated upwards. Fruit 3-valved. Seeds many, turgid, very rarely not appendiculate.—Herbs, very often perennial, rarely somewhat shrubby plants; leaves scattered or at the root crowded; stipules persistent, often large; flowers 1 rarely 2 on an elongated at the apex reflexed stalk. Bracteoles conspicuous; the fruitbearing flowers often smaller and later with diminutive or no petals, the earlier showy flowers frequently sterile.

Hybanthus: Sepals not or slightly lengthened into a free base, nearly equal. The lower petal conspicuously longer and usually but little protracted into a hollow base. Stamens touching each other at their margin; the 2 rarely 4 lower ones bearing an appendage or gland. Style dilated upwards. Fruit 3-valved. Seeds many or few, turgid, appendiculate.—Herbs, less frequently shrubby plants; stems leafy; leaves scattered, more rarely opposite; stipules often small; flowers 1 or more on a stalk.

Hymenanthera: Sepals without appendages. Petals equal, sessile. Stamens bearing a dorsal scale. Style very short. Stigma divided into lobes. Berry 1- to 4-seeded. Placentas 2. Seeds turgid.—Shrubs, often tall; leaves scattered or fascicled; stipules minute; flowers axillary 1 or several together, short-stalked, not large, very fragrant, the fruitbearing flowers smaller than the others and on separate plants.

VIOLA.

Tournefort, institutiones rei herbariæ 419, t. 236 (1700).

Under this name Plinius and some other ancient authors refer already to our fragrant violet.

Represented in very many extratropical countries, and on high mountains of some intratropical regions.

SPECIES:

Viola betonicifolia.

Smith in Rees' Cyclopedia xxxvii. (1819).

Stemless, perennial; without offshoots; leaves oblong or oval, with a generally 2-lobed base, all along with short or almost obliterated teeth; stipules adnate to the leafstalk, scarious, seldom toothed, only their very acute apex free; flowerstalks long; sepals bluntly appendiculate; petals violet, the four upper ones bearded, the lower one with a roundish protruding base; lower stamens with nearly awlshaped appendages; style club-shaped; seeds appendiculate; cotyledons orbicular.

On grassland, not altogether dry, of sparse occurrence, ascending to the Alps.

Extends to South Australia, Tasmania, New South Wales, South-Queensland and Norfolk-Island.

The species-name is to indicate the similarity of the leaves to those of the medicinal Betany-herb of Europe.

Viola Caleyana.

G. Don, General System of Dichlamydeous Plants i. 329 (1831).

Perennial; stem erect or recumbent; leaves heartshaped unless occasionally broadly triangular, short-toothed; stipules of leafy consistence, free, with remote teeth; flowerstalks long; sepals short-appendiculate; petals white, all glabrous or the lateral ones faintly bearded, the lower one with a roundish protruding base; lower stamens with gibbous appendages; style clubshaped; seeds appendiculate; cotyledons orbicular.

On springs or rivulets of the forest-mountains of Gippsland; also on the Mitta-Mitta and Hume's River, not frequent.

Extends very sparingly to New South Wales and Tasmania. Named after the discoverer of this plant, Mr. George Caley, who was sent by Sir Joseph Banks in the beginning of this century as plant-collector to New South Wales, and who was the first to cross the Blue Mountains.

Viola hederacea.

Labillardière, Novæ Hollandiæ plantarum specimen i. 66, t. 91 (1804).

Perennial; offshoots rooting, rarely producing a leafy stem; leaves in tufts on the nodes, from a kidneyshaped or orbicular verging to a rhombe- or wedge-shaped form, with short and blunt or almost obliterated teeth; stipules free, scarious, usually fringed, very acute; flowerstalks long; sepals scarcely appendiculate; petals blue, or towards the margin white, the lowest hardly at all protruding at the base, the lateral ones bearded; lower stamens without appendages; style not thickened upwards; stigma very minute; seeds not appendiculate; cotyledons oval.

Dispersed throughout the whole colony, except the desert regions, ascending the highest Alps.

Extends to South Australia, Tasmania, New South Wales and South-Queensland.

The species-name alludes to some resemblance of this Violet in foliage and manner of growth to Linné's Glechoma hederacea, well known in Britain as the Ground-Ivy.

HYBANTHUS.

N. J. Jacquin, selectarum stirpium Americanarum historia 77, t. 75 (1763).

Represented in many of the warmer countries as well in the western as eastern hemisphere. Name from the Greek, referring to the gibbosity of the flowers.

Hybanthus filiformis.

Ionidium filiforme; F. v. Mueller, Plants indigenous to Victoria i. 66 (1860).

Herbaceous, glabrous; leaves linear or some oblong, the upper opposite; racemes on long stalks; paired petals acuminate, longer than the calyx; lowest petal blue, ovate-orbicular, contracted into a long narrow

base, many times longer than the others; anthers terminated by two minute linear acute lobes irrespective of the large membrane; appendage of the seeds almost obliterated; cotyledons oval.

On Mitchell's River, the Avon and Hume's River.

Extends to New South Wales and South-Queensland.

Hybanthus Vernonii.

Ionidium Vernonii; F. v. Mueller, Plants indigenous to Victoria i. 223 (1862).

Herbaceous, glabrous; leaves all scattered, from linear to narrow-lanceolar; flowers axillary, solitary, on short stalks; paired petals blunt, hardly longer than the calyx; lowest petal blue, ovate-orbicular, contracted into a long narrow base, several times longer than the others; anthers terminated by 2 minute teeth irrespective of the large membrane.

Near the Genoa-River. Extends to New South Wales.

The species was chosen as a compliment to Mr. W. Vernon, a horticulturist in Sydney, from whom the writer first obtained this plant.

Hybanthus floribundus.

Ionidium floribundum; Walpers, repertorium botanices systematicæ ii. 767 (1843).

Shrubby, glabrous; leaves all scattered, from linear to narrow-lanceolar; flowers several together on a short stalk or occasionally only 2 or 1; paired petals blunt, about as long as the calyx; lowest petal pale-blue or white, obcordate-wedge-shaped, twice as long as the others; anthers terminated simply by the large membrane; seeds with a long appendage; cotyledons semicylindrical.

On the Murray-River and its lower tributaries on sandy or stony ridges or on rocky ranges. Found originally by Sir Th. Mitchell near the Australian Pyrenees.

Extends to New South Wales, South- and West-Australia.

FIG. 8.—*a*, flower; *b*, lowest petal; *c*, one of the upper petals; *d*, a sepal; *e*, fruit, seen from above; *f*, seed; *g*, longitudinal section of seed; all magnified.

HYMENANTHERA.

R. Brown, observations on the herbarium collected in the vicinity of the Congo, 442 (1818).

The name refers to the anthers, terminated by a membranous appendage.

SPECIES:

Hymenanthera Banksii.

F. v. Mueller, First General Report, p. 9 (1853).

Branchlets not rarely spinescent; leaves generally oblong-linear or somewhat wedgeshaped, thick, entire, or with remote and callous teeth, seldom verging into a lanceolar or oval form; stalks decurved, always one-flowered; sepals oval-orbicular; petals yellow, almost oval; berries small, globular or oval; seeds black.

On banks of watercourses or among irrigated rocks particularly of the more open forest-regions in the southern and eastern parts of the colony, ascending to glacier-elevations.

Extends to Tasmania and New South Wales and in particular varieties to New Zealand, the Chatham Islands and Norfolk-Island.

The union of the two plants, described by R. Brown simultaneously as distinct species, afforded an opportunity of consecrating this Hymenanthera to its original finder, Sir Joseph Banks.

PITTOSPOREÆ.

R. Brown, Appendix to Flinders' Voyage 542 (1814).

GENERA:

Pittosporum: Sepals free, seldom unequally united. Petals mostly coherent into a tube. Stamens surrounding the pistil. Anthers free, bursting lengthwise. Ovary erect. Fruit of thick and hard consistence, divided into 2–5 valves, imperfectly septate. Seeds turgid, very often outside viscid.—Shrubs or trees; leaves scattered, at the summit of the branches often whorl-like crowded, almost constantly quite entire; flowers often fragrant; fruits usually large.

Bursaria: Sepals always free. Petals from the base divergent. Stamens surrounding the pistil. Anthers free, bursting lengthwise. Ovary erect. Fruits much compressed, 2-celled, bursting only at the summit, not of thick consistence. Septum extremely narrow. Seeds 1–3 in each cell, vertical, flat, surrounded by a very narrow margin, not viscid.—A shrub, becoming arborescent, often spinescent; leaves scattered or fascicled; flowers paniculate, as well as the fruits small.

Marianthus: Sepals always free. Petals from the base divergent or oftener coherent into a tube. Stamens surrounding the pistil.

Anthers free, bursting lengthwise. Ovary erect. Fruit slightly compressed, two-celled, bursting along the margin, and sometimes along the septum, not of thick consistence. Seeds several in each cell, turgid, neither margined nor viscid.—Somewhat woody, seldom herbaceous plants, often climbing; leaves scattered; flowers in most instances showy.

Billardiera: Sepals always free. Petals coherent into a tube. Stamens surrounding the pistil. Anthers free, bursting lengthwise. Ovary erect. Berry two-celled and pulpy, rarely one-celled and hollow. Seeds several in each cell, usually turgid, not conspicuously margined.—Somewhat woody climbers; leaves scattered; flowers in most instances showy.

Cheiranthera: Sepal always free. Petals from the base divergent. Stamens bent to one side. Anthers free or at first coherent, opening at the summit by two pores, longer than the filaments. Ovary reclined. Fruit two-celled, bursting along the margin and septum, not of thick consistence. Seeds several in each cell, turgid, neither margined nor viscid.—Small perennial plants; leaves scattered or fascicled, very narrow; flowers showy.

PITTOSPORUM.

Banks; Gaertner de fructibus i. 286, t. 59, f. 7 (1788).

Represented in Africa (including Madeira), in the warmer parts of Asia, also in Polynesia and all Australia (including New Zealand). Name from the sticky exudations of the seeds.

SPECIES:

Pittosporum phillyroides.

Candolle, prodromus systematis naturalis regni vegetabilis i. 347 (1824).

Arborescent; branchlets generally drooping; leaves lanceolar-linear, flat, glabrous, with a hooked apex, indistinctly veined, perfectly entire, hardly paler beneath, the midrib never very prominent; flowers solitary or in few-flowered umbels; sepals free, oval, several times shorter than the smooth yellow petals; ovary imperfectly downy; fruits strongly compressed, bony, yellowish, roundish or verging into an oval or heart-shaped form, 2-valved rarely 3-valved and triangular; seeds dark- or orange-red.

On sandy or stony localities chiefly with limestone-subsoil, confined to the north-western part of the colony.

Extends through the deserts of extratropic and intratropic Australia.

Species-name from some resemblance of the leaves to those of one spurious olive-shrub occurring in the countries around the Mediterranean Sea, namely Linné's Phillyrea angustifolia.

Pittosporum revolutum.

Dryander, in W. T. Aiton's hortus Kewensis, second edition, ii. 27 (1811).

Shrubby; leaves from broad-oval to narrow-lanceolar, with spreading nerves and conspicuous veins, flat or recurved at the margin, above wrinkled and soon glabrous, beneath as well as the branchlets and flowerstalks usually densely rusty-downy; flowers mostly in simple corymbs or umbels; sepals slightly glandulous-downy, free, acute; petals yellow, smooth; ovary densely downy; fruit turgid, 2–3-valved, outside brown-black, inside yellow; seeds garnet-colored.

On lightly timbered ridges of the extreme south-east part of Gippsland.

Extends to New South Wales and Queensland.

Pittosporum bicolor.

Hooker, Journal of Botany i. 249 (1834).

Arboreous; leaves from broad-linear and oblong to lanceolar, not very perceptibly veined, generally recurved at the margin, above glabrescent, beneath as well as the branchlets, flowerstalks and sepals silky- or velvet-downy; flowers solitary or in umbels; sepals free, about three times shorter than the purplish and yellowish rarely pure yellow petals; ovary silky-downy; fruit turgid, bivalved; seeds brownish-red.

In the ferntree-country, ascending also to subalpine elevations.

Extends to Tasmania and New South Wales.

Pittosporum undulatum.

Ventenat, description des plantes cultivées dans le jardin de Cels, t. 76 (1800).

Shrubby, finally arboreous; leaves usually broad-lanceolar, very soon glabrous, on rather long stalks, not very thick, finely net-veined, waved towards the margin, beneath paler; flowers in corymbs or compound umbels, their stalks as well as the young branchlets slightly downy; sepals unequally connate, acute; petals white, smooth; ovary appressed-downy; fruit globular or tending towards a pearshaped form, brown-yellow and soon glabrous outside, 2–3-valved; seeds brownish-red.

In the warmer forest-glens of Gippsland, advancing to Western-Port.

Extends to New South Wales and the north-west part of Tasmania.

BURSARIA.

Cavanilles, icones et descriptiones plantarum iv. 30, t. 350 (1797).

Name from the purse- or pouch-like form of the fruit. Represented in Australia only.

SPECIES:

Bursaria spinosa.

Cavanilles, as above.

Leaves oval or oblong, narrowed into a somewhat wedgeshaped base, glabrous or less commonly covered beneath with subtle and close downs, entire, seldom irregularly or imperfectly serrated; flowers in the panicles often numerous; petals white, smooth; style exceedingly short or almost obliterated; fruits roundish or verging into a cordate or kidney-shaped form.

Common as well in the lowlands as in the mountain-districts, particularly in stony or shrubby places.

Extends over a vast part of Australia, but absent or very rare in Central- and North-West Australia.

MARIANTHUS.

Huegel, enumeratio plantarum Novæ Hollandiæ austro-occidentalis 8 (1837).

Richly represented in South-West Australia, rarer in South-East Australia. Named by Baron von Huegel in honor of the Princess Marie Melania von Metternich, who patronized horticulture in the Austrian metropolis.

SPECIES:

Marianthus procumbens.

Bentham, flora Australiensis i. 117 (1863).

Dwarf, herbaceous; leaves verging from a lanceolar into a linear wedgeshaped or oval form, entire or with a few teeth towards the summit, often recurved at the margin; flowers small, mostly solitary, or 2 or 3 together, their stalks reflexed in age; petals divergent from the base, hardly twice as long as the calyx, white and often tinged with red; style extremely short; ovary glabrous; fruit kidneyshaped-orbicular, small; seeds wrinkled.

On sterile wooded or scrubby ridges and in heath-grounds of sparse occurrence, ascending to the highest Alps.

Extends to New South Wales and Tasmania.

Marianthus bignoniaceus.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria i. 6 (1854).

Twining; leaves oval, oblong or lanceolar, not seldom with a heart-shaped base, entire at the margin; flowers long, solitary or 2 or 3 together; petals coherent to near the summit into a cylindrical slightly bellshaped corolla several times longer than the calyx, orange-yellow, somewhat downy; filaments threadlike-thin, as well as the style very long; ovary silky; fruit narrow-ellipsoid, elongated.

On umbrageous brooks and springs in the Grampians and adjoining ranges, ascending to 5,000 feet.

Extends to South Australia.

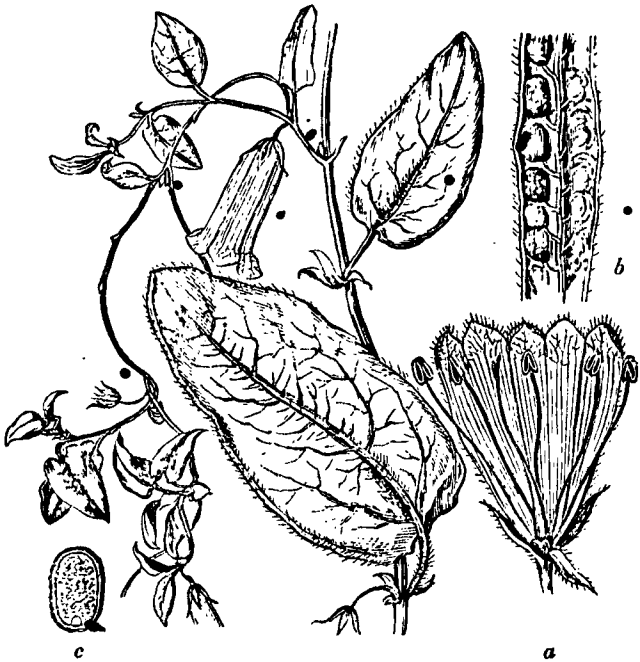


FIG. 9.—*a*, a flower laid open; *b*, portion of a fruit, opened; *c*, a seed cut longitudinally; all somewhat magnified.

BILLARDIERA.

Smith, Specimen of the Botany of New Holland, i. t. 1 (1793).

Represented in extratropic Australia only. Dedicated by Sir James Smith to Dr. J. J. Labillardière, the naturalist who accompanied Admiral d'Entrecasteaux in search of Count Lapérouse and his companions.

SPECIES:

*Billardiera longiflora.

Labillardière, Novæ Hollandiæ plantarum specimen i. 64, t. 89 (1804).

Leaves verging from a broad-linear to an oval form, entire or rarely toothed or lobed towards the summit; flowers solitary, pendent; petals many times longer than the nearly lanceolar sepals, bending together into an almost cylindrical and often elongated corolla; style very long; berry 1-celled, hollow, mostly blue; seeds not enveloped in pulp.

On shady brooks or river-banks and in damp forests, particularly in the ferntree-country.

Extends to Tasmania and New South Wales.

Billardiera scandens.

Smith, as above.

Leaves verging from a narrow-lanceolar into an oblong or rarely oval form; flowers solitary, rarely 2–4 together; petals twice or three times as long as the narrow sepals, acuminate, bending together into an almost bellshaped corolla; style very short; berry 2-celled, livid; seeds enveloped in pulp.

On stony or rocky ridges chiefly among shrubs along rivers or in damp forest-country, confined to the southern and eastern parts of the colony, ascending to subalpine elevations.

Extends to the south-eastern parts of South Australia, to Tasmania, the littoral regions of New South Wales and Queensland.

Billardiera cymosa.

F. v. Mueller, in the Transactions of the Victorian Institute i. 29 (1855).

Leaves verging from a narrow-lanceolar into a broad-oval or rarely orbicular form; flowers several together, sometimes paniculate, seldom solitary; petals three times or several times as long as the nearly lanceolar sepals, acuminate, bending together into an almost bellshaped corolla; style very short; berry 2-celled, at first purplish; seeds enveloped in pulp.

In barren localities and almost confined to the north-western parts of the colony, observed however also on scrubby ridges of Bacchus-Marsh and by Mr. Fullagar on the You Yangs.

Extends to South Australia and New South Wales.

Species-name from the disposition of the flowers.

CHEIRANTHERA.

All. Cunningham, in Lindley's Botanical Register, 1719 (1834).

Represented only in extratropic Australia, as far as known.

Name from the almost hand-like union of the anthers.

SPECIES:

Cheiranthera linearis.

All. Cunningham, as above.

Leaves linear, somewhat channelled, entire at the margin, seldom narrow-lanceolar, flat and toothed; anthers much shorter than the large blue petals; fruit ellipsoid-cylindrical.

On dry stony or bushy hills not frequent; at Maryborough, Rev. J. J. Halley; at Mount MacIvor and near the Ovens-River.

Extends sparingly to South Australia, New South Wales and South-Queensland.

DROSERACEÆ.

Salisbury, paradisus Londinensis 95 (1809).

GENUS:

Drosera: Sepals or calyx-lobes as well as petals and stamens 5, rarely 4, 6, 7 or 8. Anther-cells slit longitudinally. Ovary 1-celled. Placentas and styles frequently 3, less commonly 5, rarely 4 or 2. Valves of the fruit corresponding in number to the styles and placentas. Seeds numerous.—Herbs beset with gland-bearing hair, very seldom glabrous and submersed-aquatic; petals prevailingly white, always extremely tender and soon shrivelling.

DROSERA.

Linné, genera plantarum 89 (1737).

Represented in most countries of the globe, called Sundew.

Name from the Greek, alluding to the exudation from the glands, giving these plants an appearance as if covered with dew.

SPECIES:

Drosera pygmæa.

Candolle, prodromus systematis naturalis regni vegetabilis i. 317 (1824).

Stemless, extremely minute; leaves rosette-like crowded, orbicular, shorter than the leafstalk and fixed to it near their centre; stipules whitish, shining, cleft into a few fringes; flowers single on a hair-like smooth stalk; sepals glabrous, as well as petals, stamens and styles normally 4, minute; stigmas undivided; fruit 4-valved; seeds oval.

On sandy and temporary humid heath-ground rather rare, though easily passed; about the Grampians, near Portland Bay, on Curdie's and Gellibrand's River, near Port Albert.

Extends to South Australia, Tasmania and New South Wales.

Drosera glanduligera.

Lehmann, novarum et minus cognitarum stirpium pugilli viii. 37 (1844).

Small, stemless; leaves rosette-like crowded, orbicular or verging into an oval or kidneyshaped form, about as long as the flat leafstalk and fixed to it at the base; stipules none; flowers in racemes; sepals as well as the flowerstalks glandular-downy; petals crimson or almost scarlet; styles 3, once or twice bifid; fruit 3-valved; seeds oval-globular.

On pasture-land in many places.

Extends to New South Wales, South Australia and West-Australia.

Drosera Whitackeri.

Planchon, in annales des sciences naturelles, troisième série ix. 302 (1848).

Stemless; root ending in a globular tuber; leaves large, rosette-like crowded, almost oval and gradually contracted into the wedgeshaped stalk, streaked; stipules none; flowers large, singly on their stalk; sepals glabrous; petals white, much longer than the stamens; styles 3, deeply cleft into numerous capillary divisions; fruit 3-valved; seeds roundish-oval, comparatively large, blunt.

Rather frequent on grass-land, particularly in the southern regions of the colony, flowering early in the spring.

Extends to South Australia.

Named in honor of a collector of plants, who found this species at Encounter-Bay.

Needs further comparison with D. rosulata (Lehm. pugil. viii. 36) from West-Australia.

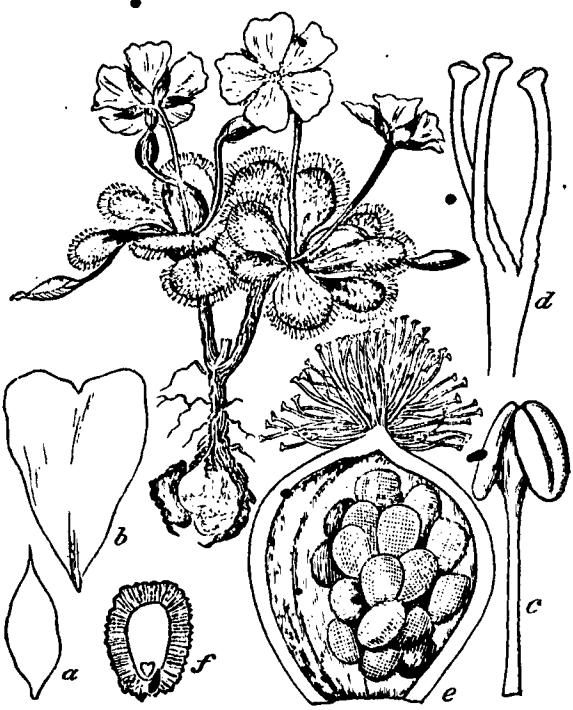


FIG. 10.—*a*, sepal; *b*, petal; *c*, stamen; *d*, styles; *e*, longitudinal section of fruit; *f*, longitudinal section of seed; all variously magnified.

Drosera Arcturi.

Hooker, Journal of Botany i. 247 (1834).

Root somewhat creeping, passing into a leafy very short stem; leaves crowded or some scattered, oblong or broad-linear, gradually narrowed into the clasping stalk; stipules none; flowers rather large, singly on their stalk; sepals not much shorter than the white petals, as well as the flowerstalks glabrous; styles 3 rarely 4, undivided; stigmas broad; capsules 3- rarely 4-valved; seeds oval, margined.

In the high alpine regions only, and there on the mossy banks of brooks or in boggy or gravelly places irrigated by melting snow.

Extends to the Alps of New South Wales, Tasmania and New Zealand.

Species-name derived from the first place of discovery, Mount Arthur, called so in honor of the first Governor of Tasmania.

Drosera Indica.

Linné, species plantarum 282 (1753).

Stem mostly elongated, scantily downy; leaves all scattered, long-linear, undivided, gradually contracted into the acute apex; stipules bristle-like or none; flowers in simple lateral racemes, as well as the stalk slightly glandular-downy; petals white or purple, about twice as long as the calyx; styles 3, bifid to near the base, the divisions towards the summit stigmatose; capsule 3-valved; seeds very minute.

Around lakes and lagoons towards the junction of the Murray- and Darling-River rare.

Extends to subtropical and intratropical Australia, Asia and Africa.

Drosera binata.

Labillardière, Novæ Hollandiæ plantarum specimen i. 78, t. 105 (1804).

Stemless, tall; leaves on very long glabrous stalks, divided to the base into two long linear simple or bipartite or dichotomous gradually acuminate segments; stipules connate, fringed towards the apex; flowerstalks very elongated, bearing at the summit 2–4 racemes or seldom 1 only, as well as the sepals glabrous; petals large, white; styles often 3, cleft into numerous capillary lobes; capsule 3-valved; seeds linear-filiform; the outer membrane much longer than the albumen.

In springy bogs, often growing in moss, scattered through our colonial area except the desert-tracts.

Extends to South Australia, Tasmania, New South Wales and South-Queensland.

Species-name from the simply or repeatedly binary division of the leaves.

Drosera spathulata.

Labillardière, Novæ Hollandiæ plantarum specimen i. 79, t. 106 (1804).

Stemless; leaves rosette-like crowded, oval- or oblong-spathular, contracted into a flat stalk; stipules connate, deeply dissected; racemes spike-like, unilateral, 1 or 2 on an elongated flowerstalk and as well as this usually glandular-downy; flowers small; petals white or red, generally less than half exserted; styles 3, deeply cleft into two simple or bilobed divisions; fruit very small, 3-valved; seeds ellipsoid, their outer membrane not expanded.

In bogs at Port Phillip (Dr. Howitt), about the Grampians, also in the Western Port district and in Gippsland.

Extends to Tasmania, New Zealand, New South Wales, Queensland and also to South-Eastern Asia.

Drosera peltata.

Smith ; Willdenow species plantarum i. 1546 (1797).

Root ending in a globular tuber ; stem erect, leafy, glabrous ; radical leaves rosette-like crowded, from roundish to kidneyshaped, fixed at the base to their stalk ; stem-leaves broadly crescentshaped or almost semiorbicular, scattered or laterally ternate, fixed centrally to their filiform stalk ; stipules none ; flowers in terminal racemes ; sepals closely appressed, fringed, usually glandular-hairy ; petals white or pink ; styles 3, rarely 4 or 5, deeply cleft into numerous capillary lobes ; fruit 3-valved, rarely 4- or 5-valved ; seeds ovate, their outer membrane not expanded.

On meadows chiefly, throughout nearly the territory of the colony.

Extends to South Australia, Tasmania, New South Wales, Queensland, also South-Eastern Asia.

Species-name from the mode of attachment of the leaves.

Drosera auriculata.

Backhouse ; Planchon in annales des sciences naturelles, troisième série ix. 295 (1848).

Root ending in a globular tuber ; stem erect, leafy, glabrous ; radical leaves rosette-like crowded, from roundish to kidneyshaped, fixed at or near the base to their stalk ; stem-leaves broadly crescentshaped or almost semiorbicular, scattered or laterally ternate, fixed centrally to their filiform stalk ; stipules none ; flowers in terminal racemes ; sepals laxly appressed, flexuous, glabrous ; petals white or pink ; styles 3, rarely 4 or 5, deeply cleft into numerous capillary lobes ; fruit 3-valved, rarely 4- or 5-valved ; seeds awlshaped-cylindrical, their outer membrane long protruding at both extremities.

On grass-land, also in sandy localities, not rare.

Extends to South Australia, Tasmania, New South Wales and South-Queensland.

Species-name from the form of the leaves.

Drosera Menziesii.

R. Brown ; Candolle, prodromus systematis naturalis regni vegetabilis i. 319 (1824).

Root ending in a tuber ; stem long, weak, often somewhat scandent, in its lower part leafless, distantly beset with very narrow scales and glabrous ; leaves laterally ternate, seldom two together or scattered, orbicular, slightly cupshaped or some transversally elliptical, all fixed centrally to their filiform and often elongated stalk ; racemes terminal ; flowers few, large ; sepals hairy ; petals usually white ; styles 3, repeatedly divided into di- or trichotomous capillary lobes ; fruit 3-valved ;

seeds almost cylindrical, their outer membrane bluntly expanded at both extremities.

In sterile localities, particularly among bushes, penetrating into desert-country, thus occurring in most parts of our colony, although not in the higher mountain-regions.

Extends to Tasmania, South- and West-Australia, as also to the south-western part of New South Wales.

Species-name in honor of Archibald Menzies, who as naturalist of Vancouver's expedition found this plant, when in 1791 King George's Sound was discovered.

HYPERICINÆ.

Jaume de St. Hilaire, exposit. fam. ii. 23, t. 75 (1805).

GENERA:

Hypericum: Sepals and petals 5, very seldom 4. Stamens indefinite, free or united into bundles. Ovary 1–5-celled. Styles usually from 3–5, entirely or upwards free. Fruit 1-celled, with 3–5 parietal placentas, or 3–5-celled by the margins of the valves inflexed to the axis and splitting along the septa thus formed. Seeds without laminar expansion. Albumen none. Cotyledons shorter than the radicle.—Herbs or shrubs; leaves dotted; stipules absent; petals generally yellow.

Elatine: Sepals and petals 2–5. Stamens of the number of the petals or double their number. Styles as many as petals. Fruit septate, by the margins of the valves meeting in the axis. Seeds without laminar expansion, with scanty or without albumen.—Herbs or rarely somewhat woody plants, often aquatic; stipules present; petals white or red.

HYPERICUM.

Tournefort, institutiones rei herbariæ 254, t. 131 (1700).

The name passed from Hippocrates and Dioscorides over to Plinius for one Mediterranean species of this genus.

Represented in very many countries, but seemingly absent from arctic regions nor occurring in all intratropical lowlands, ours being the only representative in Australia.

Hypericum Japonicum.

Thunberg, flora Japonica 279, t. 31 (1784).

Glabrous; stem herbaceous, quadrangular; leaves sessile, from oval to oblong or lanceolar; flowers in cymes or somewhat racemous or paniculate, or only very few or merely a single flower terminating the stem; sepals lanceolar, appressed, with 3 nerves and without teeth; petals persistent, entire; filaments almost disconnected; fruit oval, 1-celled, 3-valved; placentas narrow-linear, sutural; seeds numerous, yellowish-brown, ellipsoid, net-veined.

On grass-lands and also in barren localities rather frequent, ascending to the snow-regions.

Extends to many other parts of Australia, but rare in the central and north-western parts of our continent, and beyond Australia in New Zealand, New Caledonia, Southern and Eastern Asia.

ELATINE.

Linné, genera plantarum 118 (1737).

Name from some supposed resemblance in miniature of the foliage of one European species with that of the Silverfir, which latter as Elate occurs already in the Odyssee.

Represented in most countries of both hemispheres, but scantily only.

SPECIES:

Elatine ammannioides.

Wight, Catalogue of Plants of East-India, n. 155 (1833).

Procumbent, rigidulous; stem and branches downy but not often glandular; leaves of almost herbaceous consistence, from narrow-lanceolar to nearly oval, often glabrous, simply opposite, almost sessile, serrulated; stipules lanceolar, incised, nearly fringed; flowers very small, mostly glabrous, always crowded in the axils; their stalklets much shorter than the leaves; sepals, petals, stamens, styles and also valves of the fruit 3–5, very seldom more; sepals acute, 1-nerved, partially serrated; petals usually oval; filaments all exceedingly narrow; styles extremely short; fruit longer than broad; valves somewhat rigid; seeds brown, almost ellipsoid, strongly net-veined.

On temporarily inundated places at the Murray-River, near its confluence with the Darling-River.

FIG. 11.—*a*, flower seen from above; *b*, side-view of flower; *c*, stamen; *d*, transverse section of fruit; *e*, seed; *f*, longitudinal section of seed; all variously magnified.

Extends to North-Australia, intratropical Africa, intra- and subtropical Asia as far as Persia.

Species-name from the resemblance of some plants of the Lythraceous genus Ammannia.

Elatine Americana.

Arnott, in the Edinburgh Journal of Natural Science i. 431 (1830).

Glabrous, creeping, often submersed, leaves membranous, from oval verging into an oblong or seldom orbicular form, simply opposite, entire; stipules triangular, denticulated; flowers solitary, sessile, very small; sepals, petals, stamens, styles and also valves of the fruit 3, occasionally 2 or 4; petals roundish; stigmas nearly sessile; fruit broader than long; valves membranous; septa evanescent; seeds almost cylindrical, slightly curved, net-veined, pale-brown.

Along the margins of freshwater or on muddy temporarily inundated places in many localities.

Extends as far as known through extratropical Australia, New Zealand, India, North- and South-America.

Requires further comparison with the European E. triandra (Schkuhr, Bot. Handb. i. 345, t. 109).

POLYGALEÆ.

A. L. de Jussieu, annales du muséum xiv. 386 (1809).

GENERA:

Polygala: Inner sepals lateral, large, petal-like. The two upper petals exterior, adnate to the lower upwards concave petal towards their lower margin, the two lateral petals minute or absent. Stamens 8. Anthers opening by a terminal aperture. Ovary 2-celled. Fruit compressed, slit by marginal dehiscence, rounded at the base. Seeds nearly always with an arillar appendage.—Herbs or shrubs; leaves scattered, rarely opposite; sepals usually persistent; lower petals often crested at the summit.

Comesperma: Inner sepals lateral, large, petal-like. The two upper petals exterior, adnate to the lower upwards concave petal towards their lower margin, the two lateral petals minute or absent. Stamens 8. Anthers opening by a terminal aperture. Ovary 2-celled. Fruit compressed, slit by marginal dehiscence, usually contracted into a long and narrow base. Seeds mostly invested with long descending silky hair.—Perennial herbs or shrubs; leaves scattered, never very large; sepals deciduous; lower petal never crested at the summit.

POLYGALA.

Tournefort, institutiones rei herbariæ 174, t. 79 (1700).

Name adopted from Dioscorides, who ascribed to one of the Mediterrancan species the effect of increasing the secretion of milk; hence the name.

Represented in most countries of the globe, seemingly absent however from Central and South-West Australia, New Zealand and Polynesia.

Polygala Sibirica.

Linné, species plantarum 702 (1753).

Perennial; stems short, as well as the flowerstalks downy; leaves scattered, shining, on very short stalks, early glabrous, net-veined, the lower ones oval or some roundish, the upper ones becoming lanceolar or elliptical; flowers small, in short lateral racemes, or rarely only 2 or 1 together, longer than their stalklets; bract oval-lanceolar, longer than the minute acute bracteoles, but much shorter than the stalklet; exterior sepals lanceolar; interior sepals far the largest and usually oval, nearly as long as the lower petal and as the roundish-heartshaped flat-margined fruit; stigma with a terminal stalked and a sessile lateral lobe; ovary glabrous; seeds oval, downy, their appendages deeply cleft into three narrow lobes.

On grassy meadows along the Upper Ovens River, Upper Goulburn-River, Mitta-Mitta and Hume's River, ascending to subalpine elevations.

Extends to New South Wales and Queensland and beyond Australia to the subtropical and temperate parts of Asia.

COMESPERMA.

Labillardière, Novæ Hollandiæ plantarum specimen ii. 21, t. 159–163 (1806).

Name from the Greek, and alluding to the long hairs which descend from the summit of the seed in most species.

Represented only in Australia, but there nearly in all longitudes and latitudes, though not by very numerous species.

Comesperma scoparium.

Steetz, in Lehmann's plantæ Preissianæ ii. 309 (1847).

Shrubby; branchlets often pungent; leaves minute, bract-like, subulate; flowers singly scattered along the branches on stout and very short stalks; bracts several, crowded together, very minute, scale-like; bracteoles roundish-oval; outer sepals small, all disunited, equal, almost oval, about half as long as the blue roundish inner sepals; upper petals bearded; filaments free above the middle; fruit wedgeshaped-oval, not contracted into a stalk-like base, but thick-margined; seeds merely short-downy, with a membranous appendage at the lower extremity.

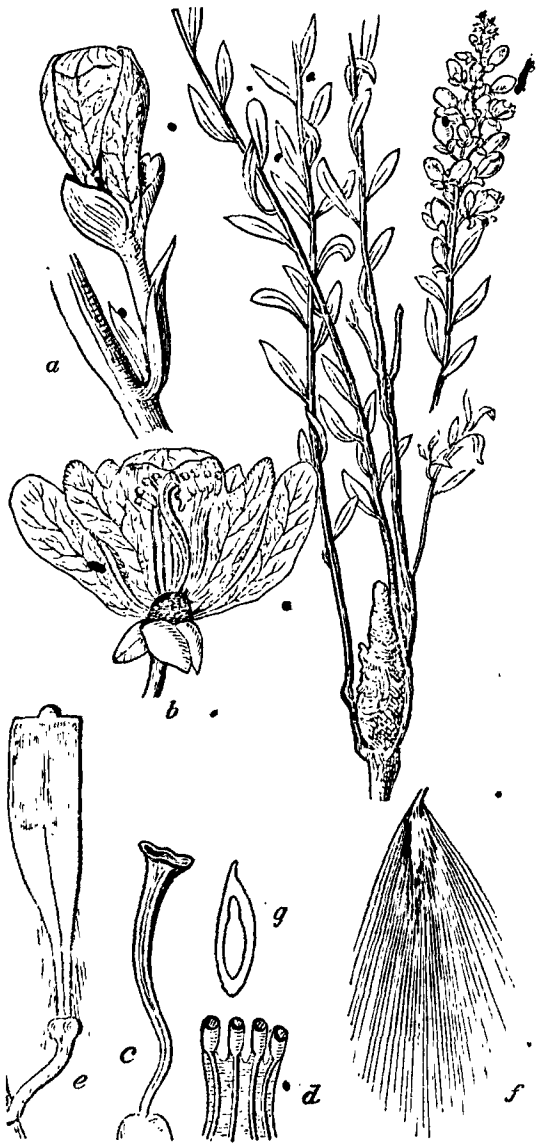
In the sandy desert on the Murray-River; Dallachy.

Extends to New South Wales, South- and West-Australia.

Species-name from the colonial appellation in West-Australia, where it is one of the native Broom-Brushes.

Comesperma polygaloides.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 7 (1854).



Herbaceous; stems short; leaves narrow- or oblong-lanceolar, glaucous, flat, faintly one-nerved; racemes many flowered, red, hardly stalked; stalklets shorter than the flowers; bracteoles about half as long as the bract, all acute; the two upper of the outer sepals united, all much shorter than the purplish inner ones; all petals unbearded; filaments united to near the anthers in two parts; fruit broad-linear and wedgeshaped, contracted into a long stalk-like base; seeds everywhere long-downy, without any conspicuous appendage.

Scattered over less fertile plains and low ridges of the southern and western parts of the colony.

Extends to South- and West-Australia.

Species-name from the great habitual resemblance to the ordinary British Milkwort, Linné's Polygala vulgaris.

FIG. 12.—*a*, flower with stalklet bract and bracteoles; *b*, flower laid open; *c*, style with stigma; *d*, half of the stamens; *e*, fruit; *f*, seed; *g*, longitudinal section of seed; all variously magnified.

Comesperma calymega.

Labillardière, Novæ Hollandiæ plantarum specimen ii. 23, t. 162 (1806).

Herbaceous; stems short; leaves lanceolar or the lowest verging into an oval form, all flat and faintly 1-nerved; racemes densely many-flowered, conspicuously stalked; stalklets shorter than the flowers; bracteoles hardly half as long as the bract, all acute; outer sepals all disunited, oblong-lanceolar and more than half as long as the inner blue spatular-oval sepals; petals all unbearded, blue; filaments free above the middle; fruit spatular-wedgeshaped, long contracted into a stalk-like base; seeds wool-downy, without any conspicuous appendage.

On bushy ridges and hills particularly in heathy localities of the southern and western parts of the colony.

Extends to Tasmania, South- and West-Australia.

Species-name from the proportionately great length of the outer portion of the calyx.

Comesperma defoliatum.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 189 (1862).

Herbaceous; stems rather short and extremely slender, leafless or with but few narrow-lanceolar or linear acute leaves; racemes remotely many-flowered; stalklets shorter than the flowers; bracteoles more than half as long as the bract; outer sepals all disunited, oblong, more than half as long as the inner blue spatular-oval sepals; petals all unbearded, blue; filaments free above the middle; fruit almost spatular, rounded at the summit, contracted into a long stalk-like base; seeds from their summit long- and straight-downy, without any conspicuous appendage.

Scattered sparingly over sandy heath-ground through the littoral tracts of the colony.

Extends to Tasmania and New South Wales.

Comesperma ericinum.

Candolle, prodromus systematis naturalis regni vegetabilis i. 334 (1824).

Somewhat shrubby; leaves numerous, linear- or oblong-lanceolar, rarely oval or at the base dilated, usually reflexed or revolute at the margin, terminated mostly in a minute bristle-point; racemes many-flowered; stalklets about as long as the flowers; bracteoles half or less than half as long as the semilanceolar bract; outer sepals all disunited and much shorter than the broad-ovate pink inner sepals; petals all unbearded; filaments united to near the anthers in two parts; fruit heartshaped-spatular, contracted into a long stalk-like base; seeds long- and straight-downy, with a small appendage at the lower extremity.

On heath-tracts from the lowlands far up to the mountains, not rare in the southern and eastern parts of the colony.

Extends to Tasmania, New South Wales and South-Queensland.

Species-name from some external resemblance to some real heaths or species of Erica.

Comesperma retusum.

Labillardière, Novæ Hollandiæ plantarum specimen ii. 22, t. 160 (1806).

Shrubby; leaves numerous, lanceolar- or oval-oblong, blunt, flat or inflexed at the margin; racemes densely many-flowered, rather short; stalklets about as long as the flowers; bracteoles half or more than half as long as the semilanceolar bract; outer sepals all disunited and conspicuously shorter than the oval pink inner sepals; petals all unbearded; filaments united to near the anthers in two parts; fruit upwards rather suddenly dilated and short-bilobed, contracted into a long stalk-like base; seeds long- and straight-downy, without any appendage.

Abundant in mossy moors and along torrents and brooks of the Australian Alps, also on Mount William (Sullivan), and rare on the higher ranges along the Gellibrand's River.

Extends to Tasmania, New South Wales and South-Queensland.

Species-name from the depressed apex of the fruit.

Comesperma volubile.

Labillardière, Novæ Hollandiæ plantarum specimen ii. 24, t. 163 (1806).

Tall, twining; leaves linear- or elliptical-lanceolar, distant; racemes terminal, axillary and lateral; stalklets shorter than the flowers; bracteoles more than half as long as the broad-lanceolar bract; outer sepals all disconnected and much shorter than the blue or rarely pink or white roundish-heartshaped at the base suddenly narrowed inner sepals; lower petal distinctly 3-lobed; the two upper petals minutely hairy at the margin; filaments above the middle free; fruit wedgeshaped-oblong, contracted gradually into a stalk-like base; seeds almost glabrous at the sides, long-downy at the margin, without any appendage.

In forest- and bush-country widely distributed over the colony.

Extends through most parts of extratropical Australia, except the far-inland desert-regions.

TREMANDREÆ.

R. Brown, in Flinders's voyage ii. 554 (1814).

Name from the terminal apertures of the anthers.

Represented, as far as known, in extratropic Australia only.

GENUS:

Tetratheca: Stamens in one row or nearly so. Anthers continuous with the filament, 2-celled or when 4-celled two of the cells in front of the two others, all contracted into a terminal tube. Seeds appendiculate. Leaves scattered or whorled, rarely absent, never all simply opposite; petals purple, rarely white, before expansion each including a pair of stamens; filaments very short; anthers usually purplish-black.

TETRATHECA.

Smith, Specimen of the Botany of New Holland i. t 2 (1793).

Name from the usually 4-celled anthers.

Tetratheca pilosa.

Labillardière, Novæ Hollandiæ plantarum specimen i. 95, t. 122 (1804).

Branches not angular; leaves scattered or crowded, rarely somewhat whorled, from linear to oblong or lanceolar, rarely ovate or almost rhombeshaped, often revolute at the margin, very seldom absent; sepals appressed, rhombeshaped- or roundish-oval, often acuminate, as well as the petals usually four; anthers smooth, with cells longer than the tubular apex; ovary with one or less frequently two ovules in each cell; fruit wedgeshaped- or roundish-oval; seeds downy.

On heath-tracts, particularly of the mountainous parts of the colony, ascending to subalpine elevations.

Extends to New South Wales, Tasmania and South Australia.

Three varieties might be distinguished: One either beset with glandless hair or glabrous, and producing narrow leaves; one, which is less common, beset with glandular hair, and producing broader leaves and petals; one, which as yet is only found in the valleys of the Upper Yarra, of a glaucous hue, glabrous, almost without leaves and with somewhat tortuous branches; of this latter variety the fruit is as yet unknown.

Tetratheca ciliata.

Lindley, in Mitchell's Three Expeditions into Eastern Australia ii. 206 (1838).

Branches not angular; leaves scattered or more frequently in whorls of three or four, oval- or roundish-rhombeshaped, rarely some narrow-lanceolar, flat or slightly recurved at the margin; sepals soon reflexed, almost rhombeformed, as well as the petals usually 4; anthers smooth, with cells longer than the tubular apex; ovules in each cell of the ovary usually 2, and one above the other; fruit roundish; seeds downy.

Frequent in many parts of the colony in heath-ground and on barren forest-ridges.

Extends to the eastern parts of South Australia and also to Tasmania.

RUTACEÆ.

A. L. de Jussieu, genera plantarum 296 (1789).

Name from the leading genus Ruta, including the South-European Rue-plant.

GENERA:

Correa: Calyx cupshaped, with 4 or 8 teeth or lobes or entire at the margin. Petals 4, free or much oftener connate into a tube, their summits contiguous at the margin before expansion. Stamens 8,

all fertile; filaments free. Ovaries 4, each with two ovules. Styles united into 1. Fruitlets normally 4, bivalved, 1–2- rarely 3-seeded; the inner layer of the valves elastically separating, cartilagineous, operculate towards the base by the placental membrane. Seeds with amygdaline albumen and a straight cylindrical embryo.—Shrubs, rarely arborescent plants; leaves opposite, rarely ternate, always simple; petals elongated; fruitlets blunt.

Zieria: Calyx 4-cleft. Petals 4. Stamens 4, free, opposite to the lobes of the calyx and to the turgid protrusions of the basal disk. Ovaries, styles, fruitlets and seeds of Boronia.—Shrubs, rarely herbaceous plants; leaves opposite, usually consisting of tree leaflets, rarely simple and scattered; petals short, pale; fruitlets blunt.

Boronia: Calyx 4-cleft. Petals 4. Stamens 8, free, all fertile, or rarely 4 sterile (transit to Zieria). Filaments usually glandular towards the summit. Ovaries 4, coherent, each with two ovules. Styles united into one, very rarely none. Fruitlets normally 4, bivalved, 1- or 2-seeded; the inner layer of the valves elastically separating, cartilagineous, operculate towards the base by the placental membrane. Seeds with amygdaline albumen and a straight cylindrical embryo.—Shrubs, rarely almost herbaceous plants; leaves opposite, rarely some scattered or fascicled or whorled; petals short, pink, rarely crimson, blue or white, very seldom almost black outside and yellow inside; fruitlets blunt; seeds usually black.

Eriostemon: Calyx 5-cleft, very rarely 4-, 6- or 7-cleft or obliterated. Petals as many as lobes of the calyx. Stamens 10, rarely more or 3, all constantly fertile and free. Ovaries 5, rarely 4, 3 or 2, coherent, each with two ovules. Styles united into 1. Fruitlets as many as ovaries, bivalved, 1–2-seeded; the inner layer of the valves elastically separating, cartilagineous, operculate towards the base by the placental membrane. Seeds with amygdaline albumen and a straight cylindrical embryo.—Shrubs, rarely arborescent or hardly woody plants; leaves scattered, always simple; petals short, various in color; fruitlets very often terminated by a beak-like apex.

Geijera: Calyx 5-cleft. Petals 5. Stamens 5, free. Ovaries 5, each with a single ovule. Styles united. Fruitlets bivalved; inner layer of the valves almost permanently adnate or seceding. Outer covering of the seed hard. Albumen scanty. Cotyledons much broader than the short radicle.—Shrubs or trees; leaves simple, scattered; flowers bisexual; petals short, white; seeds turgid.

Acronychia: Calyx 4-cleft. Petals 4, before expansion their margins mutually contiguous. Stamens 8, rarely 4, always free and all fertile. Ovary 4-celled, with two ovules in each cell. Styles united. Fruit 4-celled, almost pulpy. Seeds 1 or 2 in each cell. Albumen of almond-like consistence. Cotyledons much broader than the short radicle.—Trees, rarely shrubs; leaves opposite, seldom some scattered; petals usually pale.

CORREA.

Smith, in the transactions of the Linnéan Society iv. 219 (1798).

Name in honor of Correa de Serra, a writer on rutaceous plants. Represented in South-East Australia only.

SPECIES:

Correa æmula.

F. v. Mueller, first general report, 10 (1853).

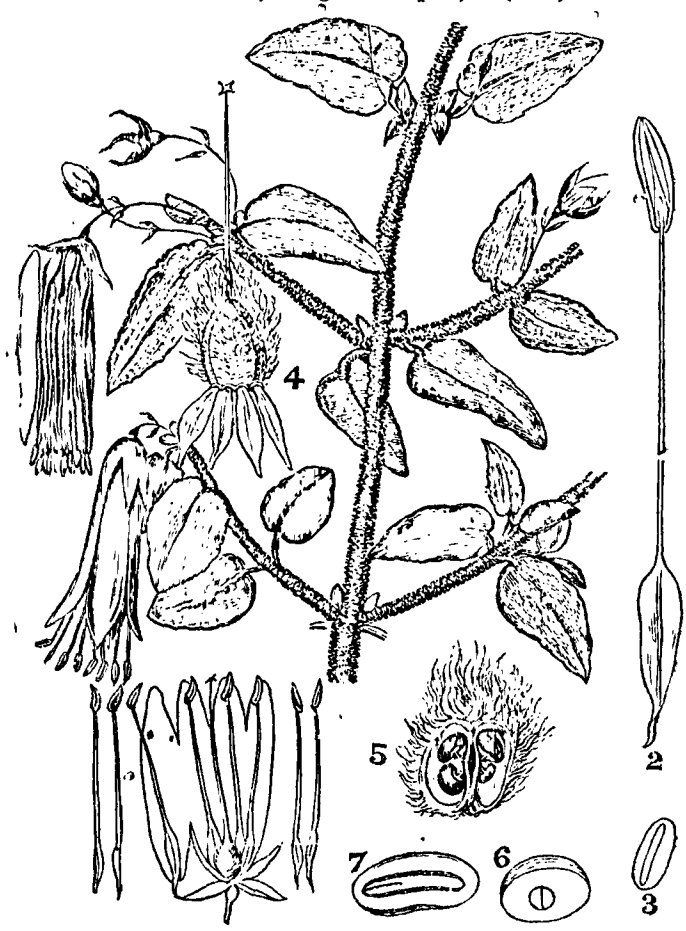


FIG. 13.—1, a flower, laid open, four of its stamens severed; 2, one of the petaline stamens; 3, a pollen-grain; 4, pistil, the corolla removed, the calyx moved downward; 5, longitudinal sections of ovaries; 6, transverse section of a seed; 7, longitudinal section of a seed.

Leaves from heartshaped and roundish to oval or rarely lanceolar; flowerstalks slender, often elongated, scantily hairy, thickened towards the apex, 2 or 3 together or solitary; calyx lax, cleft beyond the middle into 4 broad and long-acuminated lobes, scantily hairy; petals at first only free at the apex, their coherent portion outside greenish or purplish; petaline filaments broadly dilated towards the base; style glabrous; fruitlets as long as the calyx.

On rocky or irrigated places of the ranges at the sources of the Wannon and Glenelg's River (Sir Th. Mitchell).

Correa speciosa.

Andrews, Botanist's Repository, t. 653 (1811).

Leaves from heartshaped or roundish to oval or oblong; flowerstalks usually short and solitary; calyx toothless or minutely 4-toothed, often twice as broad as long; petals elongated, only at the base and apex free, the coherent portion outside crimson or purplish or greenish; the petaline filaments dilated towards the base; style generally below the middle downy; inner valves of the fruitlets often deeply excised.

Not rare in heath-ground or barren rocky localities, but not ascending the Alps.

Extends to South Australia, Tasmania, New South Wales and Southern Queensland.

Correa Lawrenciana.

Hooker, Journal of Botany i. 254 (1834).

Tall, finally arborescent; leaves thick, often large, oval; stalks with one, two or several flowers; calyx minutely 4-toothed, often as long as broad, rarely with 4 long teeth; petals free only at the apex, outside except the summit greenish-yellow, rarely crimson; filaments long exserted, none much dilated at the base; style glabrous; fruitlets densely hairy.

Descending from subalpine heights to umbrageous moist valleys, particularly along brooks and rivulets, but never reaching lowland plains.

Extends to Tasmania and New South Wales.

Named in memory of Rob. Will. Lawrence, the discoverer of this plant, who resided from 1826 till 1832 in Tasmania.

Correa alba.

Andrews, Botanist's Repository, t. 18 (1797).

Leaves thick, from oval to roundish; flowers solitary or two together; calyx toothless or indistinctly 4-toothed; petals short, white, entirely free; filaments usually shorter than the petals, none much dilated towards the base; anthers red, rather short; style glabrous; fruitlets early smooth.

On the sandy and rocky shores of the coast.

Extends to South Australia, Tasmania and New South Wales.

ZIERIA.

Smith, in the Transactions of the Linnéan Society iv. 216 (1798).

Named in memory of J. Zier, a coadjutor of Curtis in the elaboration of the Flora Londinensis.

Represented only in South-Eastern and intratropical Eastern Australia.

SPECIES:

Zieria cytisoides.

Smith, in Rees's Cyclopædia, n. 4 (1819).

Shrubby, velvet-downy; leaflets 3, oval or oblong, revolute at the margin; cymes few-flowered; bracts leafy; petals much overlapping in bud; anthers without an appendage.

On the coast-cliffs near Cape Howe and also of Gabo-Island (Maplestone).

Extends to Tasmania, New South Wales and Queensland.

Species-name derived from the similarity of the leaves to those of some South-European species of Cytisus.

Zieria lævigata.

Smith, as above.

Shrubby; leafstalks short; leaflets 3 or a few solitary, from linear to lanceolar, acute, revolute at the margin, paler beneath; flowers ternate or cymose, rarely solitary; bracts mostly very small; petals thinly velvet-downy; anthers with an appendage; seeds not shining.

On barren ridges near the Goulburn-River.

Extends to New South Wales and Queensland.

Species-name from the smooth and glabrous surface of the leaflets.

Zieria Smithii.

Andrews, Botanist's Repository, t. 606 (1810).

Arborescent; leaflets 3 or a few solitary, large, lanceolar, flat or slightly recurved at the margin, frequently beneath velvet-downy; flowers in axillary di- or trichotomous cymes; petals in bud mutually contiguous at the margins; anthers without an appendage; seeds shining.

In humid forest-valleys, particularly among tree-ferns, occurring also in the ravines of the Grampians.

Extends to Tasmania, New South Wales and Queensland.

Species-name in honor of Sir James Smith, M.D., the founder of the Linnéan Society.

Zieria veronicea.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria i. 11 (1854).

Shrubby, dwarf, velvet-downy; leaves small, all simple, oval or oblong, nearly sessile, revolute at the margin, some scattered or rarely 3 in a whorl; flowers solitary, rarely 2 or 3 together; petals overlapping in bud; anthers without an appendage.

In the scrub-country along the lower Wimmera (Dallachy).

Extends to South Australia.

Species-name selected to indicate the external resemblance to some Veronicas or Speedwells, it being the only kind with simple leaves among congeners.

BORONIA.

Smith, in the Transactions of the Linnéan Society viii. 285 (1798).

Named in memory of F. Borone, a companion of Dr. Sibthorp in his botanic excursions through Greece.

Represented, as far as known with certainty only in Australia.

SPECIES:

Boronia algida.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 100 (1855).

Shrubby; branchlets slightly velvet-downy; leaves on very short stalks, consisting of 2 rarely 1 or 3 pairs of leaflets and a terminal one; these small, from heartshaped to oval, entire or nearly so, glabrous, flat; flowers solitary or 2 or several together; their stalklets about as long as the oval-lanceolar small glabrous sepals; petals mutually contiguous at their margins in bud; filaments glabrous; style smooth, very short; stigma depressed-globular; fruitlets shorter than the petals.

On the highest stony declivities of the Australian Alps.

Extends to New South Wales.

Species-name from the frigid localities, which solely this plant inhabits.

Boronia filifolia.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 3 (1858).

Half-shrubby, glabrous; leaves simple and filiform or some consisting of 3 filiform leaflets; flowers mostly terminal, solitary or 2 or 3 together; sepals broad-lanceolar, short; petals pink, overlapping in bud; filaments short-fringed, thickened towards the summit; anthers without appendage; seeds black, shining, smooth.

Beyond the Glenelg-River near the South Australian boundary-line; Rev. J. T. Woods.

Extends to South Australia.

Boronia parviflora.

Smith, tracts relating to Natural History, t. 5 (1798).

Almost herbaceous ; leaves simple, from oval to narrow-lanceolar, flat, nearly sessile, entire or nearly so ; flowers solitary or 2 or 3 together ; sepals oval-lanceolar ; petals hardly longer than the sepals, overlapping in bud, often whitish, outside glabrous ; filaments slightly hairy or smooth ; anthers without appendage ; seeds small, shining, black.

On heathy and sandy moorland ; for instance at Portland, Curdie's and Gellibrand's River, in Gippsland ; ascends the Alps.

Extends to New South Wales and Tasmania.

Boronia polygalifolia.

Smith, as above, t. 7.

Shrubby or nearly so ; leaves simple, from linear-lanceolar to almost oval or wedgeshaped, entire or upwards 3-toothed or trifid or once or twice or even thrice trifoliolate or rarely consisting of 5 pinnately arranged leaflets ; flowers usually axillary and solitary, rarely 2 or 3 together or cymose ; petals pink, twice or three times as long as the sepals, overlapping in bud ; filaments hairy ; anthers appendiculate ; seeds rough, not shining, rather large.

In heathy, scrubby or moory localities from the lowlands to the Alps.

Extends to South Australia, Tasmania, New South Wales and Queensland.

Species-name from some resemblance of the leaves of the simple variety with those of the British Polygala vulgaris.

Boronia pinnata.

Smith, as above, t. 4.

Shrubby ; leaves consisting of pinnately arranged leaflets in 2–6 pairs or rarely a single pair, with an additional terminal leaflet, all entire, from linear to oval-lanceolar ; flowers from solitary to cymose ; petals pink, several or many times longer than the sepals, overlapping in bud ; filaments almost always hairy ; anthers without appendage ; seeds shining, black, smooth.

In heath-ground and forest-valleys scantily scattered through the southern tracts of the colony, rarely ascending to subalpine elevations.

A downy variety with narrow crowded leaflets is distinguished as var. pilosa.

Extends to the eastern part of South Australia, to Tasmania and New South Wales.

Boronia clavellifolia.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 12 (1854).

Shrubby; branchlets generally tubercular; leaves consisting of one or two pairs of leaflets with a terminal one in addition, or rarely the leaflets twice ternate, all very small, blunt, clubshaped-cylindrical; flowers solitary or 2 or 3 together; petals pink, considerably longer than the sepals, overlapping in bud; filaments glabrous; anthers apiculate; seeds dark-brown, not shining.

In the sandy deserts at and towards the Murray-River.

Extends to New South Wales, South Australia and West-Australia.

Species-name from the form of the leaflets.

Boronia cœrulescens.

F. v. Mueller, as above, p. 11.

Half-shrubby; leaves small, sessile, linear- or oblong-semicylindrical, entire or rarely 3-lobed, never compound, seldom dilated, often tubercled beneath; flowers solitary; petals bluish, seldom white, twice or thrice as long as the sepals, overlapping in bud; filaments hairy; anthers with a rather large appendage; fruitlets shorter than the petals; seeds rough, black, not shining.

In the desert along the Murray-River and its lower tributaries, also at the Grampians.

Extends to New South Wales, South- and West-Australia.

Species-name from the color of the flowers.

ERIOSTEMON.

Smith, in the Transactions of the Linnéan Society iv. 221 (1798).

Name from the Greek, indicative of the woolly stamens of many of the species.

Represented in the greater part of Australia, also in New Caledonia and New Zealand.

SPECIES:

Eriostemon Crowei.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 119 (1861).

Branchlets angular; leaves glabrous, lanceolar or narrow oblong or almost linear or rarely oval, toothless, flat or at the margin narrowly recurved; flowers solitary, on short stalks; lobes of calyx oval or roundish, petals red, many times longer than the calyx, glabrous, overlapping in bud; filaments fringed, coherent; anthers terminated by a bearded long appendage; stigma hemispherical; ovaries glabrous; fruitlets blunt.

On subalpine mountains near Lake Omeo; on the banks of the Mitta-Mitta, Hume's and Livingstone's River and the Genoa; near Lake King; found by Mr. Bissill also near Ravenswood.

Extends to New South Wales.

Our plant belongs to a variety formerly distinguished as C. exalata, with narrow blunt leaves, slender less angular branchlets and smaller often terminal flowers.

Species-name in honor of James Crowe of Lakenham, a meritorious observer of British plants, particularly Willows, to whom Sir James Smith had dedicated this plant as a separate genus.

Eriostemon lanceolatus.

K. F. Gærtner, de fructibus et seminibus iii. 154, t. 210 (1807).

Branchlets generally angular; leaves from lanceolar to almost linear, entire, glabrous in age; flowers axillary, solitary, their stalk scaly at the base; lobes of the calyx roundish; petals pink, overlapping in bud; filaments woolly-fringed; anthers with a smooth and broad appendage; ovaries glabrous; fruitlets blunt.

At Cape Howe (C. Walter).

Extends to New South Wales.

Eriostemon trachyphyllus.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 99 (1854).

Tall, glabrous, dotted with tubercular glands; leaves oblong or lanceolar or occasionally somewhat wedgeshaped, pointed, toothless; flowers solitary, seldom 2 or 3 together; lobes of the minute calyx roundish oval; petals white, overlapping in bud; filaments fringed; anthers with a very small appendage; fruitlets blunt, connate; seeds shining.

On granitic declivities at the Snowy-River and near the Genoa.

Extends, as far as known, to the most southern part of New South Wales only.

Species-name in Greek expression to indicate the glandular roughness of the foliage.

Eriostemon myoporoides.

Candolle, prodromus systematis regni vegetabilis i. 720 (1824).

Glabrous, dotted with prominent glands, glaucous; leaves large, lanceolar, rarely oval-pointed; flowers usually in umbels, seldom 2 or 1 dispersed; petals many times longer than the calyx, white or tinged with red, overlapping in bud; filaments fringed; anthers with a minute appendage; fruitlets free, much compressed, beaked.

In the higher valleys of the Hume River, Mitta-Mitta, Tambo and Genoa, and on rocky mountains in the vicinity, up to subalpine elevations.

Extends to New South Wales and South-Queensland.

Species-name from the external resemblance to some species of Myoporum.

Eriostemon obovalis.

A. Cunningham, in Field's Geographic Memoirs of New South Wales 331 (1825).

Glabrous, dotted with tubercular glands, generally glaucous; leaves thick, heartshaped or oval, towards the base wedgeshaped; blunt at the apex, convex beneath; flowers solitary or rarely 2 or 3 together; petals many times longer than the calyx, white or partially red, overlapping in bud; filaments fringed; anthers with a minute appendage; fruitlets pointed.

On bushy or rocky ridges or ranges, particularly in the north-western tracts of the colony, but of sparse occurrence.

Extends to South Australia, Tasmania and New South Wales.

Eriostemon difformis.

A. Cunningham, in Huegel's euumeratio plantarum Novæ Hollandiæ austro-occidentalis 15 (1837).

Tubercular-glandulous; leaves small, blunt, from oblong to rhomboidal or somewhat clubshaped, often convex beneath or tumid at the margin, sometimes flat; flowers solitary, rarely 2 or 3 together; petals downy, many times longer than the calyx, white or partially pink, overlapping in bud; filaments woolly; anthers with a minute appendage; ovaries downy at the summit; fruitlets beaked.

In arid rocky parts of the Grampians and adjoining mountains, and also in the Mallee Scrub at and towards the Murray-River.

Extends sparsely through a great portion of extratropic Australia.

Eriostemon pungens.

Lindley, in Mitchell's Three Expeditions into Eastern Australia ii. 156 (1838).

Dwarf; leaves lanceolar- or channelled-linear, pointed, almost or entirely glabrous; flowers solitary, rarely 2 together; petals white, several times longer than the calyx, outside glabrous, their margins mutually contiguous in bud; filaments suddenly terminated in a subulate apex, dotted, scantily hairy; anthers tumid at the apex; ovaries glabrous; fruitlets with a short beak; seeds not shining.

On Mount Hope (Sir Th. Mitchell); on the Grampians, Mount Arapiles and in the scrub-country at and near the Murray-River.

Extends to South Australia and New South Wales.

Eriostemon lamprophyllus.

F. v. Mueller, in the Journal of the Pharmaceutic Society of Victoria ii. 43 (1858).

Branchlets tubercled; leaves small lanceolar or occasionally almost oval, glabrous, flat, shining, entire or in front slightly denticulated; flowers umbellate or some solitary; calyx minute; fruitlets beaked; seeds shining; radicle several times longer than the cotyledons.

On high rocky mountains towards the sources of the Macallister-River.

Species-name selected from the Greek in reference to the lustre of the leaves.

Eriostemon Hillebrandi.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 10 (1854).

Branchlets downy, seldom glabrous; leaves from narrow-lanceolar to oval or even heartshaped, excised or dilated-bilobed at the apex or there simply truncate, often serrulated; flowers in corymbs or umbels, or some solitary; calyx minute; petals white, tinged with red, glabrous, their margins mutually contiguous in bud; filaments glabrous; anthers without an appendage; ovaries 2 or 3, seldom 4, smooth; fruitlets beaked; seeds shining; cotyledons half as long as the radicle.

On rocky brooks and on cataracts in the Grampians and on some of the adjoining mountains, ascending to 5,000 feet on the Bunyip-River, and found by Mr. Robinson near Berwick.

Extends to South Australia and Tasmania.

Named in honor of Dr. W. Hillebrand, who in 1849 noticed this species near St. Vincent's Gulf, and who for many years afterwards distinguished himself in the elucidation of the Hawaian plants.

Eriostemon umbellatus.

Turczaninow, in Bulletin de la Société impériale des naturalistes de Moscou xxii. 15 (1849).

Branchlets short-downy; leaves from linear to nearly oblong and lanceolar, entire or remotely denticulated, blunt excised at the apex, beneath very thinly velvet-downy, revolute at the margin; flowers in corymbs or umbels or some solitary; calyx minute; petals yellow, glabrous, their margins mutually contiguous in bud; filaments longer than the petals, glabrous; anthers without appendage; fruitlets with a short beak; seeds shining; cotyledons nearly as long as the radicle.

In the higher regions of the Australian Alps, also on the summit of Mount William.

In our colony the short-leaved variety with fewer flowers and downy ovaries, formerly distinguished as E. phylicifolius, has hitherto only been noticed.

Extends both in the alpine- and lowland-form to New South Wales.

Eriostemon Ralstoni.

F. v. Mueller, fragmenta phytographiæ Australiæ ii. 101 (1860).

Shrubby; leaves lanceolar-oblong or broad-linear, blunt or often bilobed at the summit, entire and recurved at the margin, glaucous beneath; flowers in terminal umbels, usually bent downward; petals very much longer than the calyx, greenish or turning red, hardly spreading, truncate at the base, somewhat coherent, their margins mutually contiguous in bud; filaments green, exserted, glabrous; anthers without appendage; style long, smooth; fruitlets with a very short beak.

On granite-rocks near the Genoa.

Extends to New South Wales.

Species-name in honor of Mr. A. J. Ralston of Sydney, a contributor to our botanical collections.

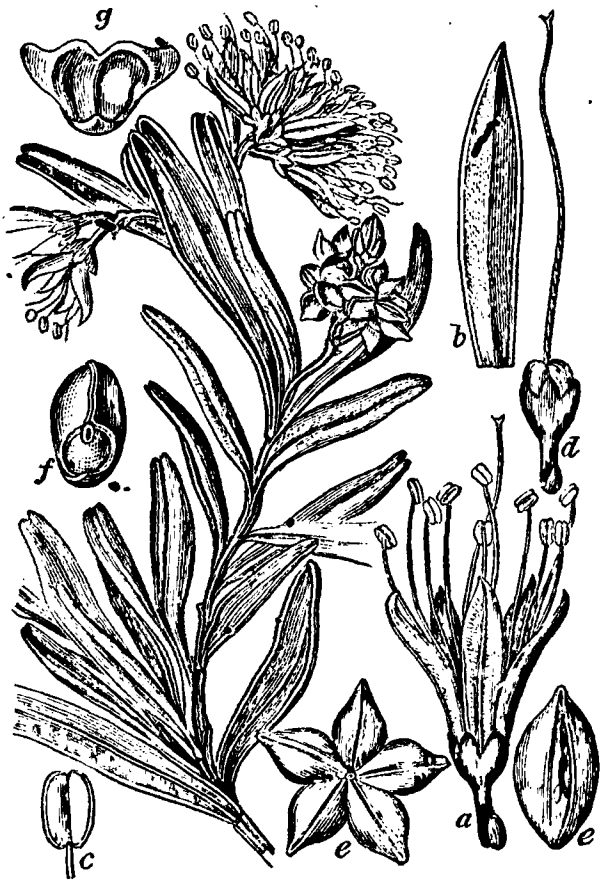


FIG. 14.—*a*, a separate flower; *b*, a petal; *c*, an anther; *d*, calyx with pistil, after the lapse of petals and stamens; *e*, fruitlets, seen from above; *f*, a fruitlet, seen from beneath; *g*, inner lamina of the fruit (endocarp).

Eriostemon squameus.

Labillardière, Novæ Hollandiæ plantarum specimen i. 111, t. 141 (1804).

Arborescent; leaves large, lanceolar or verging into a somewhat oval oblong or linear form, entire, flat, beneath as well as the branchlets and flowerstalks closely beset with silvery or partly rust-brown scales;

flowers in simple or compound corymbs; calyx minute; petals white, neither downy nor scaly; filaments fringed towards the base or almost smooth; anthers versatile; ovaries glabrous; fruitlets small, hardly beaked; seeds black, shining.

From Curdie's and Gellibrand's River to near Cape Otway and to the sources of the Barwon in forest-valleys, particularly among fern-trees, also on the Upper Yarra and on the southern sources of the Goulburn-River.

Extends to Tasmania, New South Wales and the most southern part of Queensland.

Species-name in Latin, from the scaly vesture of the plant.

Eriostemon ovatifolius.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 103 (1859).

Shrubby; leaves thick, oval, entire, almost flat, beneath together with the branchlets and flowerstalks covered with silvery and partly rusty scales; flowers axillary, solitary or a few united into a corymb; bracts oval, leafy; calyx small; petals white, scaleless; filaments glabrous; anthers versatile; ovaries scaly; fruitlets small, with a minute beak; seeds shining; radicle three times as long as the cotyledons.

On the summits of our snowy ranges, over wide tracts there abundant.

Extends to New South Wales.

Eriostemon lepidotus.

Sprengel, systema vegetabilium ii. 322 (1825).

Shrubby; leaves from oblong to linear, blunt or retuse at the summit, entire or slightly denticulated, flat or revolute at the margin, beneath as well as the branchlets, flowers and their stalks closely beset with silvery or partly rusty scales; umbels terminal, sessile or hardly stalked; calyx minute; petals persistent, inside yellow, their margins contiguous in bud; filaments exserted, capillary, glabrous; anthers erect, terminated by a minute gland; ovaries scaly; fruitlets small, hardly beaked; seeds scarcely shining.

Among the rocks on Genoa-Peak and Gabo-Island; in the higher zone of the Australian Alps; in the Grampians and through the Mallee-scrub region at and towards the Murray-River.

The alpine variety has smaller and more crowded leaves; the Grampian-plant has short and narrow leaves with margins quite rolled back; the desert-plant, formerly separated as E. sediflorus, has wedge-shaped leaves often bilobed at the summit, which as well as the branchlets are copiously conspersed with tubercular glands; this desert-form reappears on the granitic banks of the Snowy-River.

Extends to South Australia, New South Wales and Queensland.

The species-name in Greek, from the scaly vesture of the plant.

Eriostemon ozothamnoides.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 103 (1859).

Shrubby; branchlets silver-scaly; leaves small, thick, oval, narrowed into a wedgeshaped base, often retuse at the summit, entire and recurved at the margin, beneath covered with starry hair and silvery scales; flowers in sessile umbels, not numerous; calyx small, with short teeth; petals outside closely beset with scales, inside yellowish, their margins mutually contiguous in bud; filaments smooth, capillary, about as long as the petals; fruitlets scaly, hardly beaked.

On alpine streams, coming from Mount Hotham and the adjacent snowy mountains.

Extends to New South Wales.

Species-name from the resemblance in habit to some kinds of Helichrysum of the Ozothamnus-section.

The position of this plant towards the preceding one, whether as a species or as a variety, is as yet not finally settled.

Eriostemon phylicoides.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 107 (1859).

Branchlets downy; leaves linear or almost oblong, beset with partly starry hair, revolute at the margin; flowers crowded into terminal head-like sessile umbels; segments of the calyx rather long, narrow; petals yellow, almost glabrous, their margins mutually contiguous in bud; filaments glabrous, capillary, conspicuously exserted; anthers versatile, without appendage; fruitlets long-beaked.

On sandy scrub-land near the Genoa.

Extends to New South Wales.

Species-name, given by Sieber to this plant as a Phebalium, alluding to the similarity in habit to some South-African Phylicas; the specific name might be changed to E. diosmeus, because Adr. de Jussieu published this plant as Phebalium diosmeum two years before Sieber.

Eriostemon corræifolius.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 105 (1859).

Star-hairy; leaves soft, stalked, from lanceolar and oblong to oval, toothless, flat at the margin; flowers in sessile umbels or some solitary; calyx exceedingly minute; petals outside densely star-hairy, inside yellow or white, their margins mutually contiguous in bud; filaments capillary, glabrous; anthers erect, without appendage; stigmas thick, spreading, coalescent; fruitlets star-hairy, long-beaked.

On the forest-slopes of Mount Disappointment; in deep ravines of the Buffalo-Ranges and on the gravelly alluvium of the Buffalo-River.

Extends to New South Wales.

Eriostemon pleurandroides.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 106 (1859).

Densely star-hairy; leaves soft, sessile, from inverted-heartshaped to oblong or wedgeshaped, flat at the margin, chiefly crowded into fascicles; flowers rather large, terminal, solitary, sessile; calyx obliterated; petals yellow, outside downy, their margins mutually contiguous in bud; filaments capillary, glabrous; anthers erect, without appendage; stigmas free, elongated, filiform, recurved; fruitlets star-hairy, not beaked.

On the arid stony slopes of Mount Abrupt, Mount Sturgeon and some of the ranges in the vicinity.

Species-name suggested by the resemblance of this plant to some Hibbertias of the section Pleurandra.

Eriostemon trymaloides.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 106 (1859).

Star-hairy; leaves rather small, thick, mostly crowded, stalked, from oblong to oval and roundish, revolute at the margin; flowers terminal, solitary, sessile; calyx very small, membranous, deeply lobed; petals outside star-downy, inside yellow, their margins mutually contiguous in bud; filaments glabrous; anthers erect, without appendage; stigmas free, clubshaped, reflexed; fruitlets star-hairy, not beaked.

In the higher tracts of the Australian Alps.

Extends to New South Wales.

Species-name chosen for indicating the external similarity to some species of Spyridium, formerly included in the genus Trymalium; a change of the specific name would accordingly be justifiable.

GEIJERA.

Schott, Rutaceæ 7, t. iv. (1834).

Name in honor of J. D. Geijer, author of a publication on the rutaceous genus Dictamnus.

Represented in extratropic and subtropic Australia.

SPECIES:

Geijera salicifolia.

Schott, as above.

Leaves from oval to broad-linear; flowers in panicles; petals mutually contiguous along their margins while in bud; fruitlets without a beak; inner layer of the valves almost permanently adnate; outer covering of the seeds bony, black.

In the desert at and towards the Murray-River.

In our colony only the narrow-leaved variety with less copious flowers exists, which was distinguished by Lindley as G. parviflora.

Extends in this variety through most of the deserts of Australia as far as the west coast; the tall, broad-leaved typical plant occurs only in the more humid regions of East-Australia.

This plant may be placed into the genus Xanthoxylum, as X. Australasicum (A. de Jussieu, in memoires du musée de Paris xii. 503, anno 1825) notwithstanding its simple leaves, bisexual flowers and solitary ovules.

ACRONYCHIA.

R. et G. Forster, characteres generum 53, t. 27 (1776).

Name derived from the petals, inflexed at the apex.

Represented in South-Asia, Polynesia and East-Australia.

SPECIES:

Acronychia lævis.

R. et G. Forster, as above quoted.

Leaves large, consisting of a single or rarely three oval or broad-oblong leaflets; flowers in cymes; calyx small, with roundish lobes; petals white, narrow-oblong, deciduous; filaments coherent by their marginal velvet-downs; ovary upwards and also the surrounding disk glabrous; fruit spherical and somewhat quadrangular.

Rare in forest-glens at Lake King, Lake Tyers and the Genoa-River.

Extends to New South Wales, Queensland and Polynesia.

ZYGOPHYLLEÆ.

R. Brown, in Flinders's voyage ii. 545 (1814).

GENERA:

Tribulus: Sepals 5, rarely 6. Petals as many as sepals, overlapping and convolute before expansion. Stamens generally twice as many as petals, rarely 6–9, all fertile or some sterile; those opposite to the sepals with a gland at the base. Ovary 5–12-celled. Styles united. Stigmas recumbent, adnate. Fruitlets 5–12, hard, indehiscent, coherent, 1-celled or transversely divided in 2 or more cells. Seeds without albumen, solitary in each fruitlet or its subdivisions.—Herbs; leaves opposite or scattered, with pinnately arranged pairs of small leaflets; flowers solitary; petals tender, usually yellow; fruitlets frequently tuberculate.

Zygophyllum: Sepals 4–5. Petals 4–5, overlapping and convolute before expansion. Stamens 8–10, rarely 4; all fertile, free. Ovary 4–5-celled, rarely 2- or 3-celled, with 2 or more ovules in each cell. Styles united. Fruit capsular, usually 4–5-angular, bursting into valves or rarely seceding along the septa. Central column persistent. Seeds albuminous. Exterior covering of the seeds when moistened mucilaginous.—Herbs or shrubs; leaves opposite, often succulent, consisting of 1 pair, rarely 2 or more pairs of leaflets, seldom reduced to a single leaflet; flowers solitary or 2 together; petals tender, often yellow.

Nitraria: Calyx 5- rarely 6-cleft. Petals as many as lobes of the calyx, their margins folded inward before expansion. Stamens usually threefold the number of the petals. Ovary 2–6-celled, with a single ovule in each cell. Styles obliterated. Fruit drupe-like, 1-seeded, the bony inner portion upwards cleft into 6 acute valves. Seed without albumen.—Shrubs; leaves scattered or fascicled, succulent, simple; flowers in cymes, rarely solitary; petals white; bony part of the fruit with hollow impressions.

TRIBULUS.

Tournefort, institutiones rei herbariæ 265, t. 141 (1700).

Represented in the warmer regions both of the eastern and western hemisphere.

Name applied already by Theophrastos and Dioscorides to our species in reference to the thorny fruit, because somewhat the miniature of an ancient war-implement.

SPECIES:

Tribulus terrestris.

Linné, species plantarum 387 (1753), from de l'Obel, plantarum seu stirpium icones ii. 84 (1581).

Prostrate; leaves opposite or a few alternate; leaflets in 4–8 pairs, from lanceolar to oval, oblique, generally appressed-hairy beneath; sepals almost lanceolar, appressed, deciduous; stamens 10, all fertile; fruitlets 5, depressed, wingless, with 2 or 4 dorsal thorns, tubercular at the back, generally 3-celled, leaving no central axis.

In the desert on the Murray-River.

Extends through nearly the whole of subtropical and tropical Australia, Asia, Africa and America, and also to South-Europe.

ZYGOPHYLLUM.

Linné, genera plantarum 126 (1737).

Represented in some of the warmer parts of Asia, in Africa, extending also to Amur, South-Europe and extratropical Australia, very rare in America.

Name from the Greek, in allusion to the leaflets, conjugated in a pair.

Zygophyllum apiculatum.

F. v. Mueller, in Schlechtendal's Linnæa xxv. 373 (1852).

Half-shrubby, glabrous; leaflets oblique-oval, on a somewhat dilated stalk, entire; sepals 5, oval-lanceolar; petals 5, spotless; stamens 10; filaments with a wedgeshaped adnate scale; ovules 4–5 in each cell of the ovary; fruit drooping, in outline semioval, with five acute angles, truncate at the vertex, each angle dilated into a short blunt appendage; ripe seeds generally solitary.

On calcareous subsaline tracts of the desert at and towards the Murray-River.

Extends through a great part of the interior of extratropic Australia.

Species-name derived from the characteristic terminal protraction of the angles of the fruit.

Zygophyllum glaucescens.

F. v. Mueller, Plants indigenous to the Colony of Victoria i. 228 (1862).

Herbaceous, glabrous; leaflets oblique oval, perfectly entire, on a margined stalk, often of a greyish hue; sepals 4, oval-lanceolar, persistent; petals 4; stamens 8; scale of the filaments wedgeshaped, adnate, teethless at the sides; ovules 7–9 in each cell of the ovary; fruit drooping, in outline almost oval, with four longitudinal angles; ripe seeds 3–5 in each cell.

On subsaline desert-plains at and towards the Murray-River, the Avoca and Wimmera.

Extends to New South Wales and South Australia.

Zygophyllum crenatum.

F. v. Mueller, in Schlechtendal's Linnæa xxv. 374 (1852).

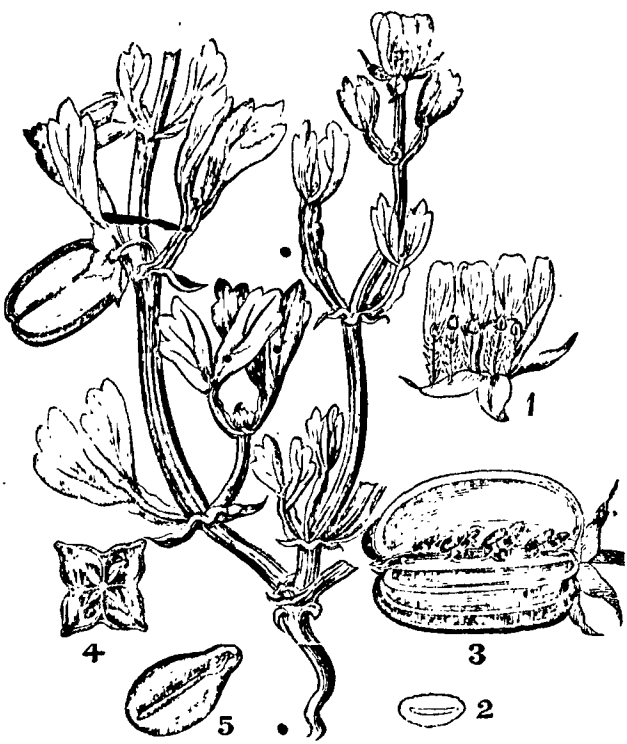


Fig. 15.—1, a flower laid open; 2, pollen-grain; 3, fruit, burst open; 4, transverse section of fruit; 5, a seed.

Annual, glabrous; leaflets oval-wedgeshaped, bluntly toothed at the summit, on a broadly dilated stalk; sepals 4, oval-lanceolar, persistent; petals 4, spotless; stamens 8; scale of the filaments wedgeshaped, adnate, jagged, fringed; ovules 7–9 in each cell of the ovary; fruit drooping, in outline almost oval, with four broadly margined angles; ripe seeds 4–8 in each cell.

On sandy and also on saltish depression at and towards the Murray-River.

Species-name from the terminal indentations of the leaflets.
Extends to New South Wales and South Australia.

Zygophyllum Billardieri.

Candolle, prodromus systematis naturalis regni vegetabilis i. 705 (1824).

Herbaceous, glabrous; leaflets from oblong to linear, oblique, entire, on a margined stalk; sepals 4, lanceolar, persistent; petals 4, spotless; stamens 8, rarely less; filaments without a scale or appendage; ovules few in each cell of the ovary; fruit in outline inversely pyramidal-semiovate, with 4 acute but not broadly dilated angles; ripe seeds 1 rarely 2 in each cell.

On coast-rocks and sand-drifts from Port Phillip to the western boundaries of the colony, also in the sand-deserts at and towards the Murray-River.

Extends to Tasmania, New South Wales, South- and West-Australia.

Two aberrant varieties exist, one with minute flowers, another with very narrow leaflets without interruption decurrent along the stalk, the latter aberration occurring also in the two following species.

Zygophyllum fruticulosum.

Candolle, as above.

Shrubby, glabrous; leaflets from linear to lanceolar or rarely oval, entire; the leafstalk not dilated; sepals 4, oval-lanceolar, persistent; petals 4, spotless; stamens 8; filaments without a scale or appendage; ovules 2 in each cell of the ovary; fruit deliscent along the septa, expanded into broad membranes along the 4 angles; ripe seeds 1 in each cell.

In desert-country towards and along the Murray-River.

Extends through the greater part of the deserts of Australia.

Zygophyllum iodocarpum.

F. v. Mueller, in Schlechtendal's Linnæa xxv. 372 (1852).

Annual, glabrous; leaflets oblong-wedgeshaped, on a broadly dilated stalk, notched at their summit; sepals 5, persistent, oval-lanceolar; petals 5, spotless; stamens 10; scale of the filaments adnate, narrow-wedgeshaped, entire; ovules 2 in each cell of the ovary; fruit small, in outline almost globular, with 5 not dilated angles; ripe seeds 1 in each cell.

In sandy and salty parts of the deserts towards and near the Murray-River.

Extends through much of the extratropic deserts of Australia.

Species-name from the violet-tinge frequently assumed by the fruits.

NITRARIA.

Linné, systema naturæ, editio decima 1044 (1759).

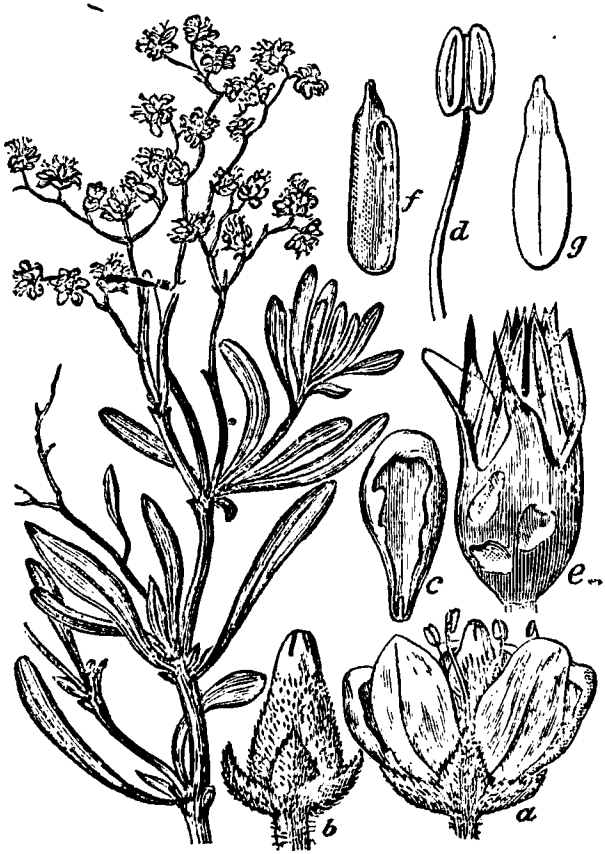
Represented in South-East Europe, North-Africa, extratropic Asia and Australia.

Name from the saline nature of the plant.

Nitraria Schoberi.

Linné, species plantarum, editio secunda 638 (1762).

Branchlets not rarely ending in thorns, as well as other parts of the plant often clothed with short grey somewhat silky downs; leaves verging from oblong to lanceolar or linear, entire; flowers on short stalklets or almost sessile on the common flowerstalks; ovary 2- or 3-celled; fruit eggshaped or ellipsoid, dark-purple, dull-red or yellow.



In the saltbush-country along or towards the Murray-River.

Extends to New South Wales, South- and West-Australia, Central Asia and the countries on the Mediterranean Sea.

Species-name in honor of G. Schober, M.D., who by order of Peter the Great, for various scientific enquiries explored the countries around the Caspian Sea.

FIG. 16.—*a*, side-view of a flower; *b*, flower after the lapse of petals and stamens; *c*, a petal; *d*, a stamen; *e*, fruit deprived of its succulent covering, some of the valves forced back; *f*, a seed; *g*, longitudinal section of a seed; all magnified.

LINEÆ.

Candolle, théorie élementaire de la botanique 214 (1813).

GENUS:

Linum: Sepals 5, entire. Petals 5, membranous, without appendages. Fertile filaments 5, connate and glandular at the base; sterile stamens tooth-like or undeveloped. Styles 5, free or connate. Fruitlets 5, connate, completely or often incompletely 2-celled, separable; septum parietal, longitudinal. Columnar axis of fruit none. Seeds solitary, oval, compressed; outer membrane when moistened mucilaginous. Albumen scanty. Embryo straight, oily.—Herbs or half-shrubs; bast tenacious; stipules absent or represented by glands; leaves small.

LINUM.

Tournefort, institutiones rei herbariæ 339, t. 176 (1700).

Represented in most extratropic countries, rare within the tropics unless in high mountain-regions.

Name, classical both in Greek and Latin for the ordinary flax-plant.

SPECIES:

Linum marginale.

All. Cuningham, according to Planchon in Hooker's London Journal of Botany vii. 169 (1848).

Glabrous, perennial; leaves from lanceolar to linear, acute, or the lower leaves oblong; stipular glands none; racemes generally few-flowered, often collected into a panicle; stalklets opposite to a minute bract-like leaf, erect, longer than the calyx; sepals oval, pointed, membranous at the margin; petals blue, rarely white, about three times as long as the sepals, their narrow basis short and smooth; filaments about as long as the sepals, short-connate; sterile stamens obliterated; styles connate to above the middle; stigmas linear-clubshaped; fruit pointed; subdividing septa imperfect; seeds brown.

GERANIACEÆ.

A. L. de Jussieu, genera plantarum 268 (1789).

GENERA:

Pelargonium: Nectar-tube from the posterior sepal innate-decurrent along the stalklet. Petals 5, rarely 4 or 2, often unequal. Stamens 10, united towards the base into a tube, unequal; the 5 petaline filaments all or partially destitute of anthers, the sepaline filaments devoid of an anterior gland. Stigmas decurrent. Cells of the ovary 5; each with 2 ovules. Prolongations of the fruitlets spirally seceding from the

lengthened fruit-axis. Seeds without albumen. Cotyledons flat or slightly curved, oblong or oval. Radicle descendent.—Herbs or shrubby plants; leaves often longer than broad; flowers in umbels, frequently showy.

Erodium: Calyx without a nectar-tube. Petals 5, equal. Stamens 10, united towards the base into a tube or almost free; the 5 petaline filaments destitute of anthers; the sepaline filaments provided at the base with an anterior gland. Cells of ovary 5, each with 2 ovules. Stigmas decurrent. Prolongations of the fruitlets spirally seceding from the lengthened fruit-axis. Seed without albumen. Cotyledons nearly elliptical, folded back on one side. Radicle descendent.—Herbs, seldom half-shrubs; leaves usually longer than broad; flowers in umbels, rarely 2 together or solitary, occasionally unisexual.

Geranium: Calyx without a nectar-tube. Petals 5, equal. Stamens 10, united towards the base into a tube or almost free. Filaments all fertile, rarely the 5 petaline filaments destitute of anthers; the sepaline filaments provided at the base with an anterior gland. Stigmas decurrent. Prolongations of the fruitlets circinate seceding from the lengthened fruit-axis. Seed without albumen. Cotyledons orbicular, convolute and on one side folded back. Radicle descendent.—Herbs or rarely shrubby plants; leaves as broad as long or broader; flowers solitary or two together, rarely in a panicle.

Oxalis: Sepals 5. Petals 5, equal, twisted before expansion, rarely none. Stamens all fertile, without glands. Styles 5, usually free. Stigmas terminal. Fruit capsular, 5-valved; the valves slit along the back, not seceding from the axis. Seeds 1 or more in each cell; outer covering of the seeds elastically bursting into 2 receding valves. Albumen copious. Embryo straight or slightly curved. Cotyledons oval. Radicle superior.—Acid herbs, seldom shrubby plants; leaves circinate-coiled before expansion, consisting of 3 or more, rarely 1 or 2 leaflets; flowers sometimes of two forms, the minute ones of such without petals.

PELARGONIUM.

L'Heritier, geraniologia, t 7 (1787).

Represented in vast numbers through South-Africa, very scantily in Guinea, Abyssinia, the Taurus, the Canary Islands, Tristan d'Acunha, extratropical Australia and New Zealand.

Name given in comparison of the fruit with a stork's bill.

SPECIES:

Pelargonium australe.

Willdenow, species plantarum iii. 675 (1800).

Herbaceous, downy, caulescent; root perennial; leaves heartshaped or somewhat orbicular or kidneyshaped, lobeless or short-lobed, crenated; flowers several or many in the umbel; bracts in a whorl, small, membranous, narrow, acute; segments of the calyx lanceolar; nectar-tube short; petals usually small, pink or white, with colored veins,

about twice as long as the calyx or sometimes not much longer; seven of the stamens generally fertile; prolongations of the fruitlets at the inner side particularly towards the middle long-downy; seeds smooth, ellipsoid, brown-black; cotyledons lobeless.

Rather frequent on sand-shores, heath-ground, desert-land, river-banks and also in mountainous localities.

Extends through much of extratropic Australia, also to New Zealand, South-Africa and Tristan d'Acunha.

By strict right of priority the name P. grossularoides (Aiton, Hortus Kewensis, ii. 420, anno 1789) though not of good etymology ought as the oldest to be restored.

Pelargonium Rodneyanum.

Mitchell, Three Expeditions into Eastern Australia ii. 143 (1838).

Herbaceous; root somewhat woody; leaves all or mostly at or near the root, from broad heartshaped to rhomboidal or almost oval, crenated and not rarely also short-lobed, often almost membranous; flowers large; petals deeply rose-colored; sterile stamens and styles rather long; fruit large.

On grass-land chiefly; far less common than P. australe.

Extends to New South Wales, South- and West-Australia.

It remains still doubtful, whether P. Rodneyanum should rank as a species or variety.

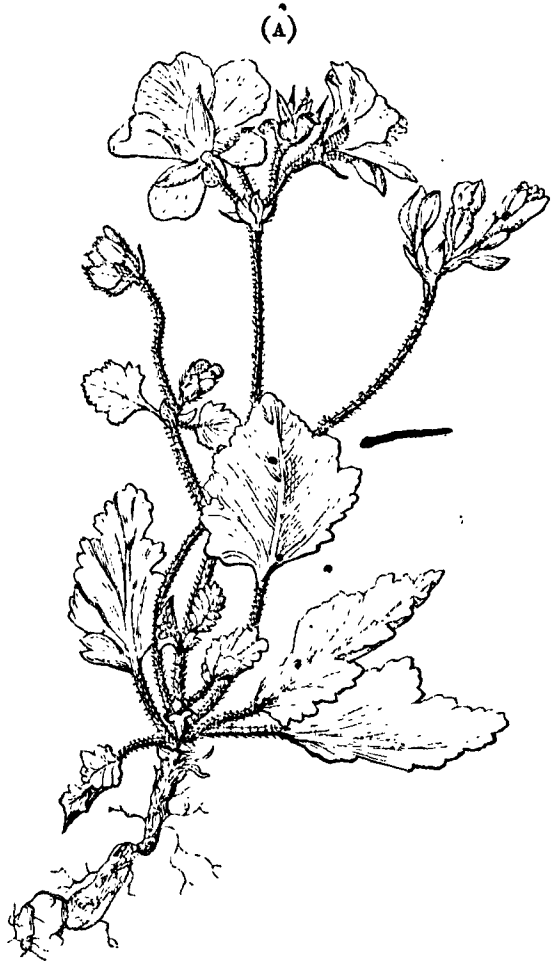


FIG. 17.—Natural size of a small variety

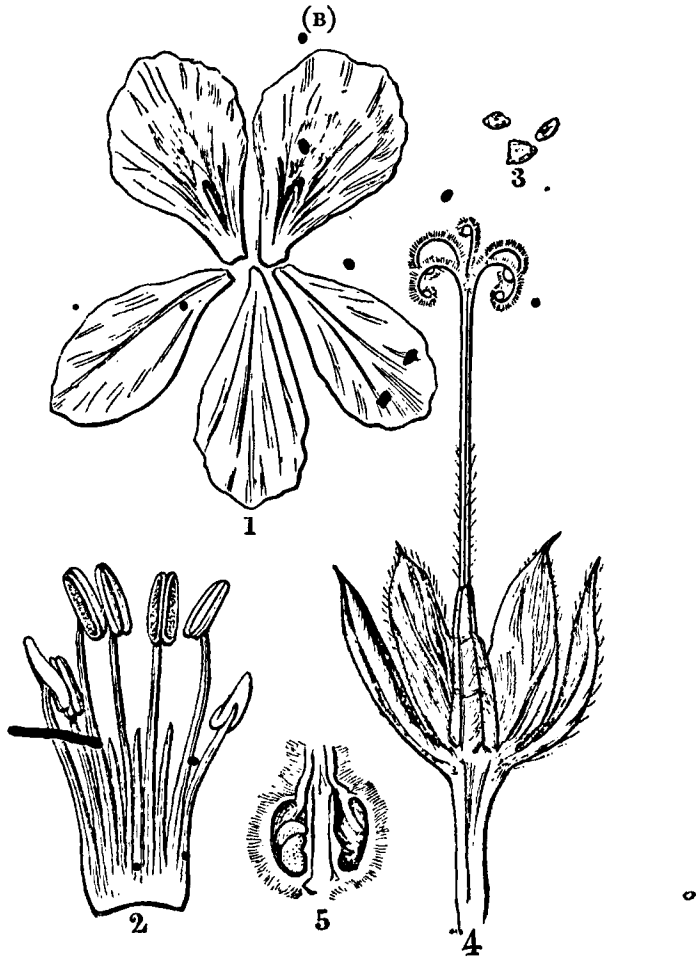


FIG. 18.—1, the five petals; 2, the seven fertile and three sterile stamens; 3, pollen-grains, the lower dry, the upper moistened; 4, pistil, with portion of the calyx; 5, longitudinal section of ovary; all, unless 1, magnified.

ERODIUM.

L'Heritier, geraniologia, t. 1 (1787).

Represented copiously in Europe, the temperate zone of Asia, also in North-Africa, rare in tropical and Southern-Africa and very rare in extratropical Australia.

Name in allusion to the fancied similarity of the fruit with a heron's beak.

SPECIES:

Erodium cygnorum.

Nees, in Lehmann's plantæ Preissianæ i. 162 (1844).

Short-hairy; leaves deeply 3-lobed, the lobes almost rhomboid, or oval-wedgeshaped, coarsely and unequally toothed, towards the base quite entire, the upper lobe larger and trifid, the lateral lobes somewhat bifid; flowers few in the umbels or only two together or rarely solitary; sepals acutely pointed; petals blue; fertile filaments glabrous, to above the middle oval-lanceolar, thence bristly-linear, toothless, considerably longer than the pointless sterile stamens; pistil silky; fruitlets short-hairy; their seceding prolongation inside silky, towards the middle also long-downy; seed almost clubshaped, red-brown; cotyledons lobeless.

Not rare in good as well as poor soil in many parts of the colony.

Extends through the greater portion of extratropic Australia.

GERANIUM.

Tournefort, institutiones rei herbariæ 266, t. 142 (1700).

Represented largely in temperate countries, advancing to the arctic zone, within the tropics chiefly on higher mountains.

Name from the Greek, indicating the supposed resemblance of the fruit to a crane's bill, as fancied already by Dioscorides.

SPECIES:

Geranium dissectum.

Linné, species plantarum, editio secunda 958 (1762).

Hairy; root often somewhat tuberous; stipules small, narrow, acute; leaves in outline roundish or verging to heartshaped or kidneyshaped, deeply 5- to 7-cleft, their main partitions usually cut into three or more narrow lobes; flowers 1 or 2 on each stalk; petals pink or pale, wedge-shaped-oval, quite entire or with a small terminal notch, as long as or longer than the short-pointed sepals; stamens all fertile; fruitlets downy, without wrinkles; seed brown-black, almost oval, netty outside; cotyledons lobeless.

Extends widely through extratropic Australia, Asia, North-Africa, Middle and Southern Europe and many parts of America. Probably reducible to G. columbinum, which was described in the first edition of Linné's species.

An alpine variety, G. sessiflorum (Cavanilles, Dissertationes 198, t. 77) differs solely in undeveloped stems and main-flowerstalks and enlarged stipules.

OXALIS.

Linné, genera plantarum 134 (1737).

Represented numerously in South-Africa and the warmer parts of America, rare in other parts of the globe.

Name from the Greek, in allusion to the acid salt (binoxalate of potash) by which the plants of this genus are pervaded.

SPECIES:

Oxalis Magellanica.

Forster, commentarii societatis regiæ scientiarum Gœttingensis ix. 33.

Stemless, downy; root creeping; leafstalks very long, with an oval glabrous membranous base; leaflets 3, broad-obcordate; flowers solitary, on a long stalk; sepals oval; petals white, as well as the styles glabrous; stigmas undivided; cells of the ovary with usually 3 ovules; capsule ovoval-globular, blunt, glabrous; seeds usually solitary in each cell, wrinkled, turgid.

On springs and torrents in beech-forests on the sources of the Yarra, Goulburn- and La Trobe-River, Tangil, Tyers-River and on the Baw-Baw Mountains, at elevations from 2,500 to 5,000 feet.

Extends to Tasmania, New Zealand and the most southern parts of America.

Oxalis corniculata.

Linné, species plantarum 435 (1753).

Caulescent, downy; root somewhat creeping; leafstalks long, slightly dilated at the base; leaflets 3, broad-obcordate; flowers 1, 2 or several on a stalk; sepals oblong-lanceolar; petals yellow, glabrous; styles short-downy; stigmas undivided; fruit cylindrical, acute, short-hairy; seeds several in each cell, strongly wrinkled, compressed, longitudinally streaked.

Frequent throughout our colonial territory except the high alpine regions.

Extends through the whole extratropic and a portion of tropic Australia, and also nearly through the whole temperate and hot zones of the globe, though regarded to be of American origin.

MALVACEÆ.

Adanson, in memoires de l'academie francaise 224 (1761).

Name from the leading genus of the order, Malva, containing the ordinary Mallows.

GENERA:

Plagianthus: Flowers unisexual or incompletely bisexual. Bracts under the calyx none. Ovary 1-celled, with 1 ovule in each cell. Stigmas decurrent. Fruitlets irregularly bursting. Seed pendent.—Herbs or shrubs, rarely trees; petals usually small.

Sida: Bracts under the calyx none. Ovary with 5 or more cells; 1 ovule in each cell. Stigmas terminal. Fruitlets secedent, bivalved at the summit. Seed pendent.—Herbs or shrubs; petals usually yellow.

Abutilon: Bracts under the calyx none. Ovary with 5 or more cells; 3 or more, rarely 2 ovules in each cell. Stigmas terminal, rarely somewhat decurrent. Fruitlets long-coherent, bivalved towards the summit. Upper seeds ascendant, lower seeds descendent.—Herbs or shrubs, rarely trees; petals often yellow.

Lavatera: Bracts connate under the calyx. Ovary with 10 or more cells; 1 ovule in each cell. Stigmas decurrent. Fruitlets whorled, shorter than the dilated axis, secedent, indehiscent. Seed ascendant.—Herbs or shrubs; petals usually pink.

Howittia: Bracts under the calyx none. Ovary 3-celled, with 2 ovules in each cell. Stigmas terminal. Fruit 3-celled, 3-valved; the valves bearing permanently the septum along the middle. Seeds ascendant. Cotyledons deeply 3-cleft.—Shrubs; petals purplish, rarely white.

PLAGIANTHUS.

R. et G. Forster, characteres generum 85, t. 43 (1776).

Represented in extratropic Australia and New Zealand.

Name from the Greek, referring to the oblique petals.

SPECIES:

Plagianthus microphyllus.

F. v. Mueller, fragmenta phytographiæ Australiæ i. [illegible] (1858).

Dwarf and woody, densely beset with downy scales; branchlets numerous, not rarely ending in thorns; leaves succulent, small, from narrow-lanceolar to oval-wedgeshaped, not rarely with 3 terminal teeth, often fascicular-crowded; flowers small, unisexual, sessile or on very short stalks, solitary or 2 or few together; calyx obconical- or cupular-bellshaped, with 5 folds, the teeth small and deltoid; petals yellowish or at the summit purplish; tube of the fertile stamens dissolved at the summit into short filaments; anthers of the seed-bearing flowers sessile on the staminal tube; cells of the ovary and styles 3–6; fruit membranous, only one of its cells fertile; seed brown.

In the sandy desert and especially in the saltbush-country at and near the Murray-River and towards Lake Hindmarsh.

Extends to New South Wales, South- and West-Australia.

Plagianthus spicatus.

Bentham, in Journal of the Linnean Society vi. 103 (1862).

Herbaceous; grey or yellowish-green; branches few or none; leaves very succulent, the lower ones from oval to lanceolar, wedgeshaped or roundish, serrulated or crenated or towards the base entire; floral

leaves connate with the stipules, on short stalks or sessile, narrower, gradually bract-like and with few or no teeth; flowers sessile, mostly bisexual, forming a leafy simple or rarely a clustered spike; lobes of the calyx deltoid, nearly as long as the angular tube; petals pale-yellowish; stamens 20 or less, their free portion very short; styles 5; fruitlets 5, secedent, glabrous, shorter than the calyx, pointed and bifid at the apex; seed dark-brown.

On marshy saline ground scattered along the sea-coast; also in salty depressions of the desert at and towards the Murray-River.

Extends to New South Wales, Tasmania, South- and West-Australia.

A depressed more branched and downy variety with all flowers in clusters was distinguished as P. glomeratus (Bentham, in the Journ. of the Linn. Soc. vi. 103).

Plagianthus pulchellus.

A. Gray, Botany of Wilkes's United States Exploring Expedition i. 181 (1854).

Tall-shrubby or arborescent; leaves large, on long stalks, oval-heartshaped, gradually and long contracted to the summit, unequally crenate, lobeless or some short-lobed; flowers unisexual, in compound or paniculate racemes; lobes of the calyx nearly as long as the tube, acute; petals white, those of the fruitbearing flowers hardly as long as the calyx; styles 5, free; fruitlets normally 5, longer than the calyx, downy at the back; seeds brown-black.

Not rare along the banks of water-courses in the southern and middle parts of the colony.

Extends to Tasmania and New South Wales.

SIDA.

Linné, genera plantarum 205 (1737).

Represented not uncommonly in Australia, frequently in the warmer parts of America, but numerously neither in Asia nor Africa nor Polynesia, absent in Europe, New Zealand and even Tasmania.

Name occurring in ancient Greek, but there applied to the white Waterlily of Europe.

SPECIES:

Sida corrugata.

Lindley, in Mitchell's Three Expeditions ii. 12 (1838).

Half-shrubby or almost quite herbaceous, star-hairy; leaves lobeless, from narrow oblong verging into a roundish or heartshaped-oval form, usually crenate or serrate; flowerstalks thin-filiform or capillary, solitary or two or three together, each with one flower; petals yellow, longer than the calyx; styles 5–10; fruitlets coherent into a depressed-roundish fruit, reticulated at the sides, hardly bursting; seeds brown.

In arid localities from Bacchus's Marsh to the deserts towards and at the Murray-River.

Extends in extratropic and intratropic Australia through the desert-tracts.

ABUTILON.

Tournefort, institutiones rei herbariæ 99, t. 25 (1700).

Represented in the warmer countries both of the eastern and western hemisphere.

Name of Arabic origin, alluding to the yellow flowers of the few Mediterranean plants of this genus.

SPECIES:

Abutilon Avicennæ.

Gærtner, de fructibus et seminibus ii. 251, t. 135 (1791).

Annual, velvet-downy; leaves large, lobeless, heartshaped, acuminate, almost entire at the margin; flowerstalks stout, axillary and solitary, or several terminal; lobes of the calyx on both sides downy; petals rather large, yellow; styles 9 or more; fruitlets longer than the calyx, compressed, beaked; seeds black.

At the Murray-River on places temporarily inundated, particularly in the beds of early drying lagoons.

Extends to South-Australia and New South Wales, and beyond Australia it occurs in the countries around the Mediterranean Sea, thence through much of tropical and temperate Asia eastward fully as far as Japan.

Name in memory of the ancient Persian physician Avicenna, who in his medical works refers to this plant.

Abutilon otocarpum.

F. v. Mueller, in the Transactions of the Philosophical Society of Victoria i. 13 (1854).

Shrubby, velvet-downy; leaves orbicular- or oval-heartshaped, crenate; flowerstalks axillary, solitary, crowded at the end of the branchlets; calyx inflated, 5-angular, with long-acuminated lobes; petals yellow; styles 10–20, rarely more; ovules 3 rarely 2; fruitlets shorter than the calyx, strongly compressed, slightly coherent, beakless; seeds black, rough.

In the Murray-Desert.

Extends through nearly all the desert-country of the Australian continent.

Name from the ear-like shape of the fruitlets.

LAVATERA.

Tournefort, Acta academiæ Parisiensis 86, t. 3 (1706).

Represented beyond extratropic Australia chiefly in the countries around the Mediterranean Sea.

Name in honor of the surgeon Lavater of Zurich, the parent of the celebrated divine and philosopher.

SPECIES:

Lavatera plebeja.

Sims, Botanical Magazine 2269 (1821).

Tall, somewhat shrubby, short-star-hairy; leaves roundish heart-shaped, with 5–7 or occasionally only 3 blunt lobes; flowerstalks solitary, 2 or several together, usually longer than the calyx; involucre about half as long as the calyx, its lobes semicordate; fruitlets acutangular, much shorter than the calyx, larger than the pyramidal-conical apex of the axis; seeds smooth, brown.

Along the bank of water-courses and on temporarily inundated depressions, particularly in the north-western part of the Victorian territory, where it is called Marsh Mallow.

Extends through a great part of extratropic Australia, more especially the inland-regions.

HOWITTIA.

F. v. Mueller, in the Transactions of the Victorian Institute i. 116 (1855).

Represented in South-Eastern Australia only.

Name in honor of Dr. Godfrey Howitt, one of the first physicians, who settled in our colony, author of a list of the plants of Nottingham, for very many years advancing also by close observations here the knowledge of the Australian Coleopters.

SPECIES:

Howittia trilocularis.

F. v. Mueller, as above.

Tall, densely beset with starry-hair; stipules very small and fugacious or oblitera-

FIG. 19.—1, flower dissected longitudinally; 2, pollen-grains, magnified diametrically 300 times; 3, fruit laid open; 4, starry-hair, magnified.

ted; leaves lobeless, from heartshaped verging somewhat into an oval or lanceolar form, denticulated or waved at the margin; flower-stalks axillary, usually solitary; calyx cleft to or beyond the middle; petals much longer than the calyx; fruit depressed-globular, outside densely clothed with soft hair, inside at the summit bearded; axis either seceding with the valves of the fruit or fissured into bristly segments; seeds black, rough.

Extends to South Australia and New South Wales.

Species-name from the 3-celled fruit, which among the numerous malvaceous genera only occurs in Gossypium (which yields the cotton of commerce), Thurberia, Hampea, Kydia and Boschia.

STERCULIACEÆ.

Ventenat, jardin de la Malmaison ii. 91 (1804).

Name from the typic genus Sterculia, which again received its appellation from the olid odor of the flowers of some species.

GENERA:

Lasiopetalum: Calyx persistent, supported by usually 3 partially connate unilateral rarely 1 or 2 always persistent bracts. Petals 5, minute, scale-like or none. Stamens 5, free, alternate with the lobes of the calyx. Anther-cells parallel, opening by a terminal pore, rarely by a lateral slit. Sterile stamens none. Ovary 3-celled, seldom 4- or 5-celled, with 2 or rarely more ovules in each cell. Style undivided. Fruit 3-valved, rarely 4- or 5-valved; the septa along the middle of the valves. Seeds 1 or 2 in each cell, ascendant, albuminous, with a lobed appendage.—Star-hairy shrubs; leaves almost always entire, without stipules; flowers in cymes; calyx nearly unchanged in age.

Thomasia: Calyx persistent, supported by 3 partially connate unilateral persistent bracts. Petals 5, minute, scale-like or none. Stamens 5, free or at the base connate, alternate with the lobes of the calyx. Anther-cells parallel, opening by a lateral slit, rarely by a terminal pore. Sterile stamens minute or absent. Ovary 3–5-celled, with 2 to 14 ovules in each cell. Style undivided. Fruit 3–5-valved; the septum along the middle of the valves. Seeds ascendant, albuminous, with a lobed appendage.—Star-hairy shrubs; leaves with usually large stipules; calyx enlarged in age.

Commersonia: Calyx persistent, without bracts. Petals 5, sessile, dilated and inflexed at the base, ligulate at the summit; not connected with the stamens. Fertile stamens 5, opposite to the petals, connate with intervening sterile stamens. Anther-cells divergent, opening by a longitudinal slit. Ovary 5-celled, with 2–6 ovules in each cell. Style undivided. Fruit densely beset with thorny or bristly excrescences 5-valved; the septa along the middle of the valves. Seeds albuminous, ascendant, with an appendage.—Star-hairy shrubs, rarely trees; leaves with small stipules; flowers in cymes.

Brachychiton: Calyx bellshaped, 5-cleft, deciduous. Petals none. Stamens of the fruitless flowers connate into a slender column; anthers rather numerous, crowded into five short bundles, connivent again into a globular mass, concealing a rudimentary ovary; cells distinct, ellipsoid, opening by a longitudinal slit. Fruitbearing flower with 5 finally secedent styles. Ovaries 5, surrounded at the base by many anthers; ovules numerous. Fruit consisting of 5 free stalked turgid unilocular portions, each without appendages and bursting along the anterior margin. Seeds by their outer star-hairy loose brittle integument often mutually coherent. Cotyledons adnate to the longitudinally bisected albumen. Radicle very short, close to the hilum.—Trees or seldom shrubs; leaves evergreen or deciduous, undivided or lobed, rarely consisting of distinct leaflets; stipules fugacious; calyx corollar; fruit frequently large.

LASIOPETALUM.

Smith, in the Transactions of the Linnéan Society iv. 216 (1798).

Represented in extratropic Australia only.

Name from the downy calyx, first assumed to consist of connate petals.

SPECIES:

Lasiopetalum ferrugineum.

Smith, in Andrews' Botanist's Repository, t. 208 (1799).

Leaves scattered, from oval to narrow-oblong, occasionally some almost heartshaped, entire or at the base irregularly lobed, beneath thinly velvet-hairy; flowers in short-stalked cymes, rather large; calyx almost sessile, inside grey-velvety, outside closely covered with rust-colored star-hair; anthers about as long as the filaments; style towards its base velvety; fruit 3-valved.

On granitic ridges at the Genoa.

Extends to New South Wales.

Lasiopetalum parviflorum.

Rudge, in the Transactions of the Linnéan Society x. 297, t. 19 (1811).

Leaves scattered, from oblong to almost linear, entire, beneath thinly velvet-hairy; flowers in short-stalked cymes, small; calyx almost sessile, inside nearly glabrous, outside closely covered with grey-brown star-hair; anthers longer than the filaments; style towards its base velvety; fruit 3-valved.

On granitic river-banks at the eastern frontier of Gippsland.

Lasiopetalum Baueri.

Steetz, in Lehmann's plantæ Preissianæ ii. 339 (1847).

Leaves scattered, narrow-oblong or broad-linear, beneath thinly velvet-hairy; cymes racemose, on conspicuous slender stalks; flowers

small and few; calyx not sessile, outside closely covered with brown-grey star-hair, inside but slightly tomentose; anthers longer than the filaments; fruit 3-valved.

On scrub-land near the north-east shores of Port Phillip; in the bushy portions of the desert at and near the Murray-River.

Extends to New South Wales and South Australia.

Species-name in honor of the celebrated Austrian plant-painter Francis Bauer, a scientific officer of Capt. Flinders's expedition, who gathered this species at Port Lincoln, when Spencer's Gulf was discovered.

Lasiopetalum Behrii.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 36 (1854).

1 2

FIG. 20.—1, flower, seen from above; 2, fruit surrounded by the calyx and opened into its valves.

Leaves scattered, narrow-oblong or somewhat lanceolar, of thick consistence, beneath thinly velvet-hairy; cymes on stalks of moderate length; flowers large and few; calyx not sessile, inside quite glabrous, outside grey-velvety; anthers longer than the filaments; style smooth; capsule 3-valved.

In the north-west desert-tract.

Extends to New South Wales and South Australia.

Species-name in honor of Hermann Behr, M.D., of Kœthen, who combined with entomologic researches also the study of the native plants in South Australia as early as 1846 and 1848, and who since devoted much attention to similar scientific pursuits in California.

Lasiopetalum dasyphyllum.

Sieber, according to Hooker's Journal of Botany ii. 414 (1840).

Leaves scattered, often large, lanceolar- or cordate-oval, rarely linear- or lanceolar-oblong, entire, beneath velvet-hairy; flowers crowded into short-stalked almost capitate cymes, rather numerous, densely clothed with usually dark-brown star-hair; calyx inside glabrous or but slightly downy; anthers hardly as long as the filaments, finally bursting lengthwise; fruit 3–4-valved, rarely 5-valved.

Among granite rocks in various parts of Gippsland; rare in the Grampians.

Extends to New South Wales and Tasmania.

Species-name from the Greek, chosen to characterize the densely hairy leaves.

Lasiopetalum Schulzenii.

Bentham, Flora Australiensis i. 265 (1863).

Leaves herbaceous, scattered, broad-heartshaped, on both pages star-hairy, entire or waved at the margin; cymes stalked, usually with several branches; bracts under the calyx solitary, rarely 2, always linear-filiform; calyx large, almost white or pale-pink, on a short stalklet, not of thick consistence, outside laxly star-hairy, inside almost glabrous; style beset with reflexed fascicular hair; capsule 3-valved.

At Cape Nelson (Allitt); near the entrance of the Glenelg-River (Rev. Jul. T. Woods).

Extends to South Australia.

THOMASIA.

J. Gay, in mémoires du muséum vii. 450, t. 6 and 7 (1821).

Represented with a solitary exception in South-West Australia only.

Name a dedication to P. and A. Thomas, Swiss naturalists of the last century.

Thomasia petalocalyx.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 35 (1854).

Leaves from oblong to oval, entire or waved at the recurved margin, not of thick consistence; stipules large, oblique-heartshaped or somewhat oval or rhomboid or semicordate; flowers few and rather large, in simple racemes; stalklets nearly of the length of the calyx; connate bracts oval-lanceolar, almost as long as the calyx; anthers oblong-linear, opening towards the apex with slits; filaments not exceeding far beyond the base of the black-purple anthers; sterile stamens awlshaped, often undeveloped; styles glabrous; ovary short-downy; fruit 3-valved.

On rocky coast-ridges of Wilson's Promontory.

Extends to South- and West-Australia.

COMMERSONIA.

R. et G. Forster, characteres generum 43, t. 22 (1776).

Represented in various parts of Australia, in tropical Asia, Polynesia and Madagascar.

Name in honor of Philibert Commerçon, meritorious as an Ichthyologist, founder of the Botanic Garden of Châtillon and naturalist of the first French expedition around the globe under Admiral Bougainville.

SPECIES:

Commersonia dasyphylla.

Andrews, Botanist's Repository, t. 603 (1804).

Leaves either oval- or oblong-lanceolar and lobeless or in outline nearly cordate and cleft into 3–5 acute lobes, long contracted upwards, irregularly toothed or crenulated, some rarely quite entire; petals white, their ligule as long as the clasping basal portion; sterile stamens 5, dilated, downy, high-connate with the fertile stamens; bristles of the fruit scattered-hairy.

Among granite-boulders of the Buffalo-Range, also near the Genoa.

Extends to New South Wales and South-Queensland.

Commersonia Fraseri.

J. Gay, in mémoires du muséum d'histoire naturelle x. 215, t. 15 (1823).

Shrubby or arborescent; leaves from heart-shaped and orbicular to oval and lanceolar, crenate or almost serrate, lobeless or short-lobed, usually acuminate; cymes expanded into panicles; petals glabrous, their ligule longer than the clasping basal portion; sterile stamens 15, glabrous, as long as or longer than the calyx and all narrow-spatular, ternately interjacent between the fertile filaments, the middle of each three the largest and deltoid at the base; fruit beset with hispid bristles, each valve also bearing a flat vertical appendage.

On the banks of the Genoa and along other streams in the vicinity.

Extends to New South Wales.

Species-name in honor of Charles Fraser, the founder of the Sydney Botanic Garden, who was the first to render known numerous plants from the Swan-River, and who also discovered many new species in New South Wales.

BRACHYCHITON.

Schott et Endlicher, melatemata botanica 34 (1832).

Represented in continental Australia only.

Name from the Greek, in allusion to the short starry hair, which invest the first described species.

Brachychiton populneum.

R. Brown, in Horsfield's plantæ Javanicæ rariores 234 (1852).

Evergreen; leaves simple, glabrous, from almost oval to rhombe-shaped, long- and narrow-acuminate, entire or acutely 3-lobed, the leaves of the young plant variously and deeply cleft or even kidney-shaped; flowers comparatively small, outside sparingly downy, inside red- and yellow-variegated; column of the stamens glabrous; fruits outside smooth; seeds 6–16 eggshaped; superior part of their outer covering permanently retained by transverse rupture as an alveolar

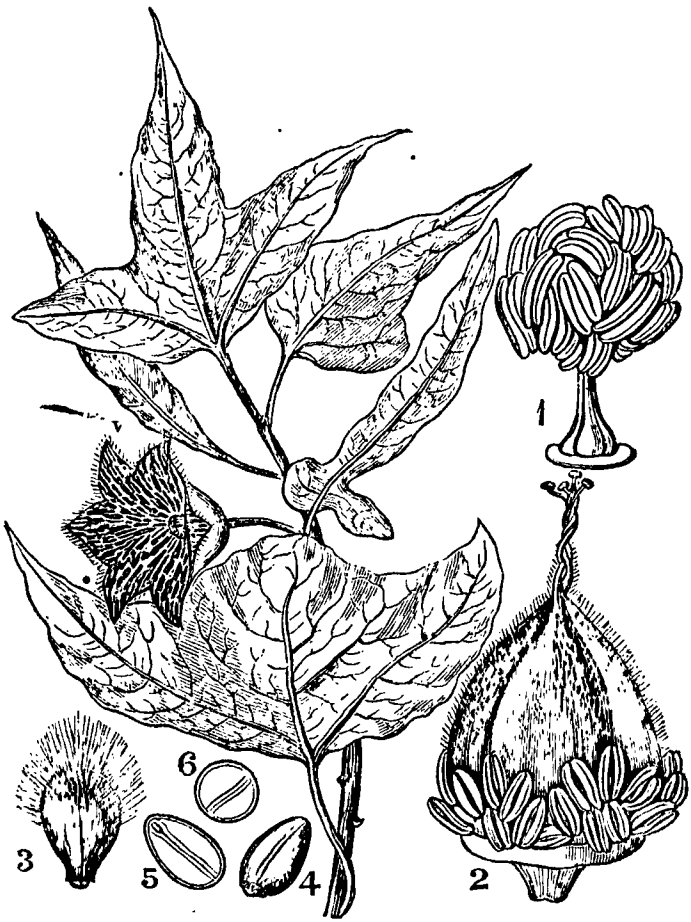


FIG. 21.—1, cluster of stamens; 2, pistils surrounded by stamens; 3, a seed with its hairy cover; 4, a seed deprived of the cover; 5, longitudinal section of a seed; 6, transverse section of a seed; 1 and 2 considerably magnified, 3–6 natural size.

stratum within the cavity of the fruit; a powdery pulp between the outer and the inner hard covering of the seed.

Among granitic rocks and drifts on the Snowy-River, the Hume-River and some of its tributaries, also on the Genoa.

Extends to New South Wales and Queensland.

Species-name from the poplar-like appearance of this tree.

TILIACEÆ.

A. L. de Jussieu, genera plantarum 289 (1789).

Name from the typical genus of the order, Tilia, classical for one of the Linden-trees.

GENUS:

Elæocarpus: Sepals 4–5. Petals 4–5, almost wedgeshaped, at and towards the summit usually lobed and fringed, inflected before expansion. Stamens indefinite; filaments short, capillary. Anthers elongated, bursting at the apex. Ovary 2–5-celled, with 2 or more pendent ovules in each cell. Style undivided. Fruit drupaceous. Seeds solitary in each cell, without an appendage.—Evergreen trees; leaves scattered; stipules deciduous; flowers in racemes; petals mostly white with rosy base or pink; fruit frequently blue.

ELÆOCARPUS.

Linné, flora Zealanica 92 (1747).

Represented as far as known in intratropical and subtropical Asia, Japan, the islands of the Pacific Ocean, Mauritius, North- and East-Australia and also New Zealand.

Name derived from the Greek, in allusion to the olive-shaped fruit.

SPECIES:

Elæocarpus cyaneus.

W. T. Aiton, epitome of the hortus Kewensis, addenda 367 (1814).

Branchlets almost glabrous; leaves conspicuously stalked, lanceolar, acuminate, serrulated, densely net-veined, almost glabrous; racemes simple; sepals acute; petals bearded inside at the base, cleft into fringed lobes; stamens five or six times as numerous as the petals; anthers linear, acutely pointed; ovary 2-celled, as well as the style glabrous; fruit small, usually 1-seeded, from globular to oval.

In forest-glens on Wilson's Promontory and from the Tambo through East-Gippsland.

Extends to New South Wales and Queensland, also King's Island.

Species-name expressive of the blue color of the fruit.

Elæocarpus holopetalus.

F. v. Mueller, fragmenta phytographiæ Australiæ ii. 143 (1861).

Branchlet thin-woolly or tomentose; leaves short-stalked, oval-lanceolar, acuminated, almost serrate, copiously veined, beneath brownish velvet-hairy; racemes brown-tomentose; bracts large; sepals acute; petals glabrous, undivided, in front slightly crenulated; stamens twice to four times as numerous as the petals; anthers oblong, not pointed;

FIG. 22 (A).—Elæocarpus holopetalus, *sprig*.—Natural size, and portion of a leaf separated, showing the strongly reticulated underside.

ovary 2-celled, as well as the lower portion of the style silky-downy; fruit black, usually 1-seeded, oval-globular.

Towards the sources of the Toolaway, Tamboon and Genoa.

Extends to New South Wales.

Species-name indicative of the lobeless petals.

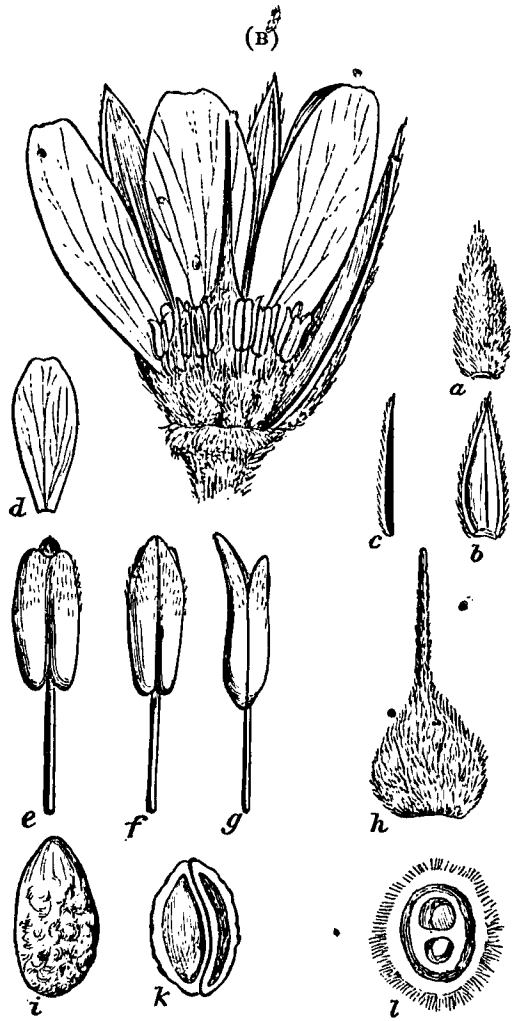


FIG. 22 (B).—*a*, back-view of a sepal; *b*, inner side of a sepal; *c*, a sepal presenting its edge; *d*, a petal; *e*, *f*, *g*, front- back- and side-view of a stamen; *h*, pistil; *i*, fruit deprived of its succulent covering; *k*, longitudinal section of the same; *l*, transverse section of fruit; all except *i* and *k* more or less magnified.

EUPHORBIACEÆ.

A. L. de Jussieu, genera plantarum 384 (1789), from B. de Jussieu (1759).

GENERA:

Euphorbia: Involucre calyx-like; its 4 or 5 teeth or lobes alternating with as many prominent disunited glands, or some of the glands petal-like or obliterated. Male flowers several or numerous, without any calyx or petals, articulated with their stalklet, generally supported by bracts. Stamen 1. Anther-cells turgid, divergent, opening by a longitudinal fissure. Female flower solitary, surrounded by the staminate flowers, stalked, with a minute calyx or oftener without any calyx. Ovary 3-celled, with 1 ovule in each cell. Styles 3, each usually bifid; stigmas 6, undivided. Fruit 3-celled, 6-valved. Seeds pendent, with or without appendage. Cotyledons broader than the radicle.—Herbs or shrubby plants, rarely trees, with milky poisonous sap; leaves opposite or scattered, the floral leaves often or seldom all leaves whorled, entire or only denticulated, with or without stipules; flower-clusters resembling a single flower, usually disposed in umbels or cymes; glands with or without small petal-like appendages.

Poranthera: Segments of the calyx 5, petal-like. Petals 5, minute, rarely undeveloped. Glands 5, bilobed, opposite to the petals. Stamens 5, free. Anthers 4-celled, opening with terminal pores. Ovary 3-celled, with 2 ovules in each cell. Styles 3, each divided to near the base into 2 segments. Stigmas undivided. Fruit depressed, 3-celled, 6-valved. Seeds wrinkled by subtle impressions, without an appendage. Cotyledons not broader than the radicle.—Herbs or somewhat shrubby plants; leaves scattered, with stipules; flowers minute, white, generally crowded into leafy corymbs, male and females intermixed; fruits very small.

Micrantheum: Segments of the calyx 6, almost equal. Petals and glands none. Stamens 3–9, free. Anther-cells opening with a longitudinal slit. Ovary 3-celled, with 2 ovules in each cell. Styles 3, undivided, longitudinally stigmatose. Fruit 3-celled. Seeds with an appendage. Cotyledons hardly broader than the radicle.—Shrubby plants; leaves small, stiff, ternately joined, but not whorled, entire; flowers solitary or a few placed together.

Pseudanthus: Segments of the calyx 6, almost equal, rarely 3, or one changed into an abnormal form. Petals and glands none. Stamens 3, 6 or more, free. Anther-cells usually separated, opening with a longitudinal slit. Ovary 3- rarely 2-celled, with 2 ovules in each cell. Styles 3, undivided, longitudinally stigmatose. Fruit 1-seeded, usually 6-valved. Seed with an appendage. Cotyledons hardly broader than the radicle.—Shrubby plants; leaves small, stiff, scattered or opposite, margined, with stipules; flowers several together or particularly the fruit-bearing ones solitary.

Bertya: Segments of the calyx 5, rarely 4. Petals and glands none. Stamens numerous, united into a central column. Anther-cells parallel, opening by a longitudinal slit. Ovary 3-celled, with 1 ovule in each cell. Styles 3, each with 2–4 segments, longitudinally stigmatose. Fruit capsular, usually 1-seeded. Seed with an appendage. Cotyledons hardly broader than the radicle.—Shrubs, rarely trees; leaves scattered, without stipules; flowers solitary or few placed together with sepal-like bracts.

Ricinocarpus: Segments of the calyx usually 5. Petals 5, generally longer than the calyx, seldom none. Glands 5, alternate to the petals. Stamens numerous, united into a central column. Anther-cells parallel, opening by a longitudinal slit. Ovary 3-celled, with 1 ovule in each cell. Styles 3, each divided usually to near the base into 2 longitudinally stigmatose segments. Fruit 3-celled, 6-valved. Seeds with an appendage. Cotyledons hardly broader than the radicle.—Shrubby plants; leaves scattered, without stipules; flowers solitary or several together.

Beyeria: Segments of the calyx usually 5. Petals generally 5 and shorter than the calyx. Glands usually 5 and alternate to the petals. Stamens numerous, closely crowded; filaments short. Anther-cells parallel, opening by a longitudinal slit. Ovary 3-celled, with 1 ovule in each cell. Stigmas sessile, connate into 1, depressed, from circular to conical, usually lobeless. Fruit 3-celled, 6-valved. Seeds with an appendage. Cotyledons hardly broader than the radicle.—Shrubby plants; leaves scattered without stipules; flowers solitary or 2 or 3 seldom more together.

Amperea: Calyx of the male flowers almost bellshaped, 3–5-lobed, the lobes contiguous in bud; female calyx deeply 5-cleft, the segments overlapping in bud. Petals none. Stamens 10 or fewer, free or at the base united. Anther-cells separated, pendent, opening by a longitudinal slit; 1 cell occasionally undeveloped. Ovary 3-celled, with 1 ovule in each cell. Styles 3, each 2-lobed. Fruit 6-valved, each valve with a terminal tooth. Seeds with an appendage. Cotyledons hardly broader than the radicle.—Herbaceous or half-shrubby plants; leaves scattered or deficient; stipules developed; flowers in axillary clusters.

Phyllanthus: Sepals 6, not often 5 or 4. Petals none. Stamens 3, rarely 2, 5 or more. Anther-cells opening by a slit. Ovary with 3 or more cells; 2 ovules in each cell. Styles 2-lobed, rarely undivided. Fruit capsular. Seeds without an appendage. Cotyledons considerably broader than the radicle.—Herbs, shrubs or trees: leaves scattered, but often forming almost 2 rows; stipules developed; flowers often clustered or the females solitary.

Adriana: Calyx of the male flowers consisting of 5 or 4 segments, the margins of which contiguous in bud; calyx of the female flowers consisting of 6–8 segments in 2 rows, the margins of which overlapping in bud. Petals and glands none. Stamens numerous, closely crowded; filaments short. Anther-cells parallel, opening by a longitudinal slit, the

connective upwards long protracted. Ovary 3-celled, with 1 ovule in each cell. Styles 3, each divided into 2 segments, longitudinally papillar-stigmatose. Fruit 6-valved, 3-celled. Seeds with an appendage. Cotyledons considerably broader than the radicle.—Shrubs; leaves large, toothed; stipules replaced by glands; flowers in unisexual spikes.

Carumbium: Calyx of the male flowers consisting of 1 or 2 sepals or rarely 2-lobed; calyx of the female flowers 2- or 3-lobed. Petals and glands none. Stamens free, 4 or more, rarely very numerous. Anther-cells opening by a longitudinal slit. Ovary 2- or rarely 3-celled, with 1 ovule in each cell. Style undivided; stigmas 2, rarely 3, short-bilobed. Fruit compressed, finally opening into 2 or rarely 3 valves or indehiscent. Seeds with an appendage or arillar covering. Cotyledons considerably broader than the radicle.—Shrubs or trees; leaves scattered, broad, entire, biglandulous at the base, with stipules; flowers in bisexual spikes.

Claoxylon: Segments of the calyx 3, rarely 2 or 4; their margins contiguous in bud. Petals none. Glands developed. Stamens indefinite in number, free. Anther-cells separated beyond their base, opening by a longitudinal slit. Ovary 3- rarely 2-celled, with 1 ovule in each cell. Styles 3 rarely 2, undivided; laterally stigmatose. Fruit usually 3-celled and 6-valved. Seed without an appendage. Cotyledons considerably broader than the radicle.—Shrubs or trees, rarely herbs; leaves large, scattered; clusters of flowers in usually unisexual racemes.

EUPHORBIA.

Linné, genera plantarum 152 (1737); from Plinius, historia naturalis xxv. 7 (printed 1469).

Represented by a vast number of species, more frequent in the northern than in the southern hemisphere, very rare or absent in alpine and other very cold regions.

Name, in memory of Euphorbos, physician to King Juba of Numidia; originally applied to a cactus-like species of North-Africa, used medicinally already in ancient times, and still so at the present day.

SPECIES:

Euphorbia Drummondi.

Boissier, centuria Euphorbiarum 14 (1866).

Procumbent, perennial, glabrous; leaves opposite, small, from roundish to oblong or rhomboid, generally denticulated, oblique at the base, with rather broad stipules; involucres very small, solitary, on short stalks, their linear-lanceolar lobes longer than the white-margined glands; styles short or obliterated; fruits minute, prominently angular; seeds wrinkled, without appendage.

In the north-western desert-tracts, also on the Snowy-River.

Extends through nearly all desert-portions of Australia, rare in Tasmania.

Possibly a variety of E. Chamæsyce (Linné, amœnitates academicæ 115) from the countries around the Mediterranean Sea.

Species-name in honor of James Drummond, who formed the most extensive collections of plants in South-West Australia.

Euphorbia eremophila.

A. Cunningham, in Mitchell's Tropical Australia 348 (1848).

Erect, glabrous; leaves remote, opposite or some scattered, from linear to oblong, denticulated or less commonly entire, often truncate; stipules nearly obliterated; involucres solitary, short-stalked; their glands almost kidneyshaped, without appendage; styles very short; fruits rather large, on a conspicuous stalklet; seeds granular-rough with a large appendage.

In the north-western desert-country.

Extends over most of the arid portions of Australia, but never to high mountain-regions.

Species-name to indicate the occurrence of this plant as chiefly in the deserts.

PORANTHERA.

Rudge, Transactions of the Linnéan Society x. 302, t. 22 (1811).

Represented in extratropical and eastern intratropical Australia.

Name explanatory of the mode, in which the anthers open.

SPECIES:

Poranthera microphylla.

Brogniart, Botanique de la voyage autour du monde sur la Coquille par Duperrey 218, t. 50 (1826).

Annual, dwarf; leaves narrow- or oval-spatular, of tender consistence, flat or at the margin slightly recurved, the floral leaves mostly extending beyond the very small flowers; stipules undivided; petals much shorter than the sepals or undeveloped; styles abbreviated.

Widely distributed through our colonial areas.

Extends to nearly every part of Australia.

Species-name from the smallness of the leaves.

Poranthera ericoides.

Klotzsch, in Lehmann's plantæ Preissianæ ii. 232 (1847).

Perennial, glabrous or somewhat downy; leaves crowded, narrow, of rather thick consistence, revolute at the margin; stipules undivided; sepals thrice or several times longer than the petals; stamens exserted; fruit comparatively small.

Near the entrance of the Glenelg-River.

Extends to South- and West-Australia.

Species-name from the heath-like leaves.

Poranthera corymbosa.

Brogniart, Botanique de la voyage autour du monde sur la Coquille par Duperrey 218, t. 50 (1826).

Perennial, tall; leaves narrow, of rather thick consistence, usually revolute at the margin, pale beneath; stipules undivided; styles elongated; fruit comparatively large, faintly lobed.

In the vicinity of the Genoa.

Extends to New South Wales.

Species-name from the corymbose arrangement of the flowers.

MICRANTHEUM.

Desfontaines, memoires du muséum d'histoire naturelle iv. 253 (1818).

Represented as far as known in East-Australia and Tasmania only.

Name from the Greek, indicative of the smallness of the flowers.

SPECIES:

Micrantheum hexandrum.

J. Hooker, in the London Journal of Botany vi. 283 (1847).

Very tall; leaves from linear to lanceolar and oval, comparatively long; flowers rather large; inner sepals of the male flowers conspicuously larger than the outer sepals; stamens 6–9; fruit almost elliptical, comparatively large.

Along brooks, particularly in the subalpine regions, but far carried along streams to lower localities.

Extends to Tasmania and New South Wales.

Species-name to indicate the number of the stamens, normally 6, in contrast to the only other species known, with 3 stamens.

PSEUDANTHUS.

Sieber; Sprengel, systema vegetabilium, curæ posteriores 25 (1827).

Represented in extratropical, very rarely in intratropical Australia.

Name from the Greek, to signify the absence of petals and the petal-like appearance of the sepals.

SPECIES:

Pseudanthus ovalifolius.

F. v. Mueller, in the Transactions of the Philosophic Institute of Victoria ii. 66 (1857).

Spreading, leaves numerous, oval, rarely roundish or oblong, mostly scattered; segments of the male calyx short, narrow- or oval-spatular; stamens 6; female calyx sessile, extremely short.

On the Grampians, Mount Disappointment and on ranges along the Macallister-River.

Extends to New South Wales.

BERTYA.

Planchon, in Hooker's London Journal of Botany iv. 472, t. 16 (1845).

Represented in extratropical and subtropical Australia.

Name in honor of Count Leonce de Lambertye, a patron of horticulture in France, abbreviated to prevent confusion with the genus Lambertia among Proteaceæ.

SPECIES:

Bertya oleifolia.

Planchon, in Hooker's London Journal of Botany iv. 473, tab. xvi. (1845).

(A)

FIG. 23 (A).—Bertya oleifolia, *sprig.*—Showing staminate and pistillate flowers.

Shrubby; leaves from linear to narrow-oblong, revolute at the margin, densely star-downy; flowers almost sessile; sepals about twice as long as the broad persistent bracts; anthers very numerous; stigmas with 2–4 segments; fruit short- star-hairy, twice as long as the calyx; seeds with a conspicuous appendage.

In the desert on the Murray-River, also in granitic debris on the Mitta Mitta.

Extends to South Australia, New South Wales and Queensland.

Species-name from some resemblance of the leaves to those of a spurious olive-tree, but not well applicable to our variety from the deserts.

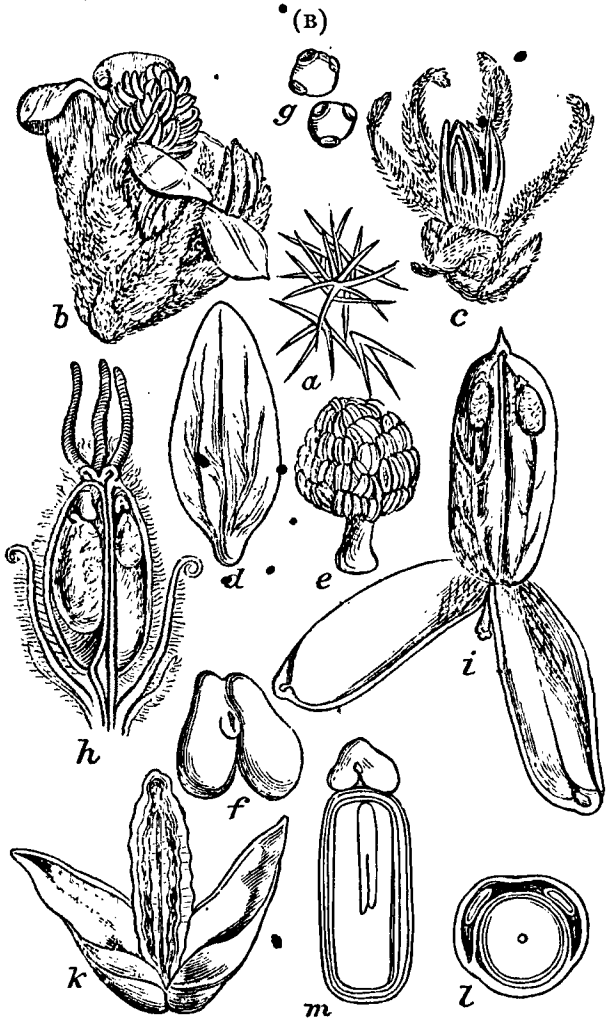


FIG. 23(B).—*a*, stellate hair of the indument; *b*, involucre, with the flowers expanded; *c*, a female flower, laid open; *d*, sepal; *e*, stamens; *f*, back-view of an anther; *g*, pollen-grains; *h*, a female flower, cut lengthwise; *i*, an ovary, opened to show the septa and the position of the ovules; *k*, septa and valves of the fruit; *l*, transverse section of the fruit; *m*, longitudinal section of a seed, exhibiting albumen and embryo; all figures magnified, but in a various degree.

Bertya Findlayana.

F. v. Mueller, fragmenta phytographiæ Australiæ viii. 141 (1873).

Arborescent; leaves elongate-oblong, flat, beneath thinly velvet-downy; flowerstalks as long as the calyx or shorter; stalklets none; sepals nearly glabrous, about three times as long as the persistent bracts; stigmas with 3 to 4 segments; fruit star-hairy, thrice as long as the sepals; seeds large, with a conspicuous appendage.

On the banks of the Hume-River and on watercourses in its vicinity, ascending to 4,000 feet.

Species-name in honor of J. Findlay, Esq., of Towong, who greatly supported the excursion, during which this species was discovered.

Bertya Cunninghami.

Planchon, in Hooker's London Journal of Botany iv. 473, tab. xvi. (1845).

Shrubby, glabrous; branchlets resinous-viscid; leaves linear, sessile, revolute at the margin; flowers on very short stalks; bracts narrow, persistent; sepals not enlarged in age; anthers numerous; ovary glabrous; stigmas with 2–3 segments; fruit narrow-elliptic.

On the Snowy-River.

Extends to New South Wales.

RICINOCARPUS.

Desfontaines, memoires du muséum iii. 259, t. 22 (1817).

Represented in many parts of Australia.

Name half Latin half Greek, from some resemblance of the fruit to that of the Castoroil-plant.

SPECIES:

Ricinocarpus pinifolius.

Desfontaines, as above.

Glabrous; leaves linear, revolute along the margin; flowers terminal; 3–6 male flowers surrounding 1 female flower or less commonly those of each sex separated, all on conspicuous stalks; male calyx cleft hardly beyond the middle into 4–6 lobes; petals large, white; female calyx deeply cleft, deciduous; fruit almost globular, beset with copious soft prickly excrescences; inner layer of the valves readily separating.

On heathy sand-lands particularly near the sea-shores, at Port Phillip, Wilson's Promontory, Cape Howe and some interjacent places.

Extends to Tasmania, New South Wales and South-Queensland.

Species-name from the resemblance of the leaves to those of a Silver-fir.

BEYERIA.

Miquel, in annales des sciences naturelles, troisième série i. 350 (1844).

Represented in several parts of Australia, particularly out of the tropic.

Name in memory of A. de Beyer, a meritorious investigator of the vegetation of Holland.

SPECIES:

Beyeria viscosa.

Miquel, as above.

Very tall; branchlets viscid; leaves firm, from oval- or lanceolar-oblong to broad-linear, mostly recurved at the margin, above glabrous, beneath pale velvet-downy; flowers conspicuously stalked, axillary or lateral; male flowers often in pairs or 3 together; anther-cells elongated, adnate to an undivided or slightly lobed connective; female flowers solitary, with smaller calyx passing into the thickened stalk; stigma almost sessile; fruit oval-globular.

On river-banks in the southern districts.

A larger variety (lasiocarpa) with densely hairy fruits in forest-valleys at the Genoa; a variety (Backhousi) with smaller leaves often quite white underneath on sand-hills of the sea-coast; a variety (opaca) with shorter and narrow leaves pale-green beneath in the north-western desert; a variety (uncinata) with nearly cylindrical leaves hooked at the summit rare on sand-ridges near the Murray-River.

Extends through a considerable portion of extratropic and subtropic Australia.

AMPEREA.

Adr. de Jussieu, de Euphorbiacearum generibus 35, t. 10 (1824).

Represented in extratropic Australia merely, so far as hitherto ascertained.

Name in honor of A. M. Ampère, distinguished in mathematics and nature-philosophy.

SPECIES:

Amperea spartioides.

Brogniart, Botanique de la voyage autour du monde sur la Coquille par Duperrey 226, t. 49 (1826).

Glabrous; stems and branches acute-angular; leaves distant or only on the lower portions of the stems developed, linear- or lanceolar- or oblong-wedgeshaped, entire or remotely toothed; stipules fringed; flowers axillary or lateral, sessile or on very short stalks; male flowers few or several together, their calyx 4–5-lobed; stamens 8–10; female flowers solitary, surrounded by male flowers or scattered; their disk

with 4 or 5 glands, their sepals lanceolar-oval; stigmas very short; tooth-like apex of the fruit-valves acute, short.

In heath-grounds particularly of the southern districts.

Extends to Tasmania, South Australia and New South Wales.

Species-name from the angular scantily leafy stems, reminding of those of the ordinary European Broombush (Spartium scoparium, L.; Cytisus scoparius, Link).

PHYLLANTHUS.

Linné, genera plantarum 282 (1737); from J. Commelyn, horti medici Amstelodamensis plantarum descriptio i. 199, t. 102 (1697).

Represented very numerously in the hotter countries of the globe, rare in the temperate zones, absent from Europe.

Name from the first described species, a leafless West-Indian shrub, the dilated branchlets of which assume a foliaceous form and thus appear to bear flowers from real leaves.

SPECIES:

Phyllanthus Fuernrohrii.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 15 (1854).

Perennial, velvet-downy, not tall; leaves small, spatular- or oblong-oval, on very short stalks; flowers solitary or 2 or 3 together, of both sexes on the same plant; sepals lanceolar-oval; stamens 3, free, anther-cells parallel; glands of the disk conspicuous; ovary downy; styles 3, free; fruit depressed-globular, with enlarged sepals; seeds smooth, brown.

On sand-ridges in the desert on the Murray-River.

Extends to Queensland, New South Wales, South- and West-Australia.

Species-name in honor of Dr. A. E. Fuernrohr, an author in several branches of natural history, for many years also president of the oldest botanical society, that of Ratisbon.

Phyllanthus lacunarius.

F. v. Mueller, as above, p. 14.

Annual, very dwarf, glaucous, glabrous; branchlets angular; leaves small, oval or oblong and often wedgeshaped towards the base, on very short stalks; flowers very minute, of both sexes on the same plant, solitary or 2–4 together, short-stalked; sepals oval; stamens 3, free; anther-cells parallel; glands of the disk conspicuous; styles 3, free; fruit small, broader than its sepals, depressed-globular; seeds longitudinally streaked, almost black.

Around exsiccating lagoons on the Murray-River.

Extends to South Australia and New South Wales.

Species-name from the predilection of this plant to grow along the margins of lagoons.

Phyllanthus trachyspermus.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 14 (1854).

Dwarf, annual, glaucous, glabrous; branchlets angular; leaves small, oblong or nearly oval, on very short stalks; flowers minute, of both sexes on the same plant, all solitary, their stalks very short; sepals oval-lanceolar; stamens 3; filaments united; anthers blunt; disk obliterated; styles 3, very short; fruit globular and protracted upwards, much broader than its sepals; seeds rather large, transversely wrinkled, asperous, triangular, at the inner angle deeply excavated.

On or near the banks of the Murray-River.

Extends to South Australia and New South Wales.

Species-name in respect to the rough seeds.

Phyllanthus thymoides.

Sieber, in Schlechtendal's Linnæa xxviii. 566 (1856).

Perennial, short-hairy; leaves small, from roundish-oval to wedge-shaped-oblong, on very short stalks, the margin recurved or revolute; flowers minute, short-stalked, those of each sex on different plants; male flowers 2–4 together; female flowers solitary; sepals oval; stamens 3, almost free; anther-cells parallel; glands of the disk conspicuous; styles 3, free; fruit depressed-globular, broader than its sepals; seeds smooth or slightly rough.

On bushy or rocky ridges, particularly in the southern districts, not frequent.

Extends to South Australia and New South Wales.

Species-name because of some faint resemblance to the ordinary thyme.

Phyllanthus Gunnii.

J. Hooker, in the London Journal of Botany vi. 284 (1847).

Shrubby, glabrous; branchlets angular; leaves from orbicular to oval, rarely obcordate, on very short stalks; flowers minute, long-stalked, those of both sexes on the same plant; male flowers solitary or oftener 2 or more placed together with one female flower; sepals oval; stamens 3, free; anther-cells parallel; glands of the disk conspicuous; styles 3, free; fruit depressed-globular, broader than its sepals; seeds brown or black.

On the Wimmera, Snowy-River and Genoa, also on Wilson's Promontory.

Extends to Tasmania, New South Wales and South Australia.

ADRIANA.

Gaudichaud, in annales des sciences naturelles v. 223 (1825).

Represented in many parts of Australia.

Name in honor of Adrien de Jussieu, son of A. L. de Jussieu and grand-nephew of B. de Jussieu, the writer of several celebrated phytographic works, among them one on Euphorbiaceæ.

SPECIES:

Adriana tomentosa.

Gaudichaud, as above.

Leaves scattered, conspicuously stalked, lanceolar-oval or in circumference heartshaped and trifid, irregularly serrate or crenate.

On the Snowy-River and some of its tributaries, also in the desert on the Murray-River and Wimmera.

Extends widely through Australia.

Adriana quadripartita.

Gaudichaud, Botanique de la voyage autour du monde par Freycinet 489 (1826).

Leaves opposite, almost sessile, from oval to lanceolar and oblong, lobeless, serrated or crenated or merely waved at the margin.

On the coast of Port Phillip and Wilson's Promontory.

Extends to South- and West-Australia, but to maritime localities only.

CARUMBIUM.

Reinwardt, elenchus seminum horti Leydensis 1823.

Represented in intratropical Asia, Polynesia and East-Australia.

Name of Malaian origin.

SPECIES:

Carumbium populifolium.

Reinwardt, as above.

Glabrous; leaves large, almost membranous, on long stalks, ovate-triangular or nearly rhombeshaped, glaucous beneath; stipules large, fugacious; bracts with 2 glabrous basal glands; male flowers 3–6 together on short stalklets, the 2 sepals not much unequal; stamens 6–10, or 5 or less in some flowers; female flowers on conspicuous stalklets, few at the base of the male raceme; sepals deciduous; fruit broad, without appendages; seeds oval-globular, enveloped in an arillar covering.

In the vicinity of the Genoa in forests.

Extends through East-Australia, also to South-Asia and Polynesia.

CLAOXYLON.

Adr. de Jussieu, de Euphorbiacearum generibus 43, t. 14 (1824).

Represented in intratropical Asia, Africa, Polynesia and in East-Australia.

Name from the Greek, in allusion to the brittle wood of trees of this genus.

SPECIES:

Claoxylon Australe.

Baillon, étude générale du groupe des Euphorbiacées 493 (1858).

Arboreous; leaves conspicuously stalked, of tender consistence, from lanceolar-oblong to oval, toothed; racemes unisexual; flowers short-stalked; male flowers 1–3 to each bract; stamens 20–35, accompanied by bearded glands; dehiscence of anthers exterior; disk urceolar, fringed; flowers in the female racemes few; ovary silky; styles free; fruit outside downy; valves inside silky.

Near the Genoa in forest-valleys.

Extends to New South Wales and Queensland.

URTICEÆ.

Ventenat, tableau du règne vegetal iii. 524 (1799).

Name from the leading genus of the order, Urtica, comprising the ordinary Stinging Nettles.

GENERA:

Trema: Segments of the calyx 5, rarely 4, their margins incurved in bud. Stamens 5, rarely 4, erect in bud. Anther-cells opening by a marginal slit. Stigmas 2, narrow, persistent. Ovary 1-celled. Ovule pendent. Fruit small, hard inside. Seed with albumen. Embryo marginal, much curved.—Evergreen trees; leaves scattered; cymes with entirely or partly unisexual flowers; fruit often succulent outside.

Ficus: Flowers unisexual, minute, concealed and crowded within a turgid almost closed receptacle. Calyx 1–6-lobed or obliterated. Stamens 1–6. Cells of the anthers distinct or confluent. Ovary 1–2-celled; ovule pendent. Style almost lateral. Stigma undivided or bifid. Fruitlets minute, numerous, within the often pulpy receptacle. Seeds albuminous. Embryo curved.—Trees or shrubs with milky sap, mostly evergreen; leaves scattered, seldom opposite; stipules often large, always at first convolute, frequently deciduous; orifice of the receptacle closed by bracts; flowers of both sexes usually within the same receptacle; ripe fruit a fig.

Parietaria: Calyx 4- rarely 3-lobed. Stamens 4 rarely 3, inflected in bud. Ovary 1-celled; ovule erect. Style 1; stigma undivided,

recurved, papillar, deciduous. Fruit small, dry. Seed albuminous. Embryo straight.—Herbs, beset with hooked hair; leaves scattered, entire, without stipules; flowers uni- and bisexual mixed, in cymes.

Australina: Calyx of the male flowers short-bilobed, the lobes unequal, the longer one inflected in bud; calyx of the female flowers 5-toothed. Stamen 1. Ovary 1-celled; ovule erect. Stigma 1, undivided, elongated. Fruit small, dry. Seed albuminous. Embryo straight.—Herbs; leaves scattered rarely opposite, always toothed, with stipules; flowers solitary or 2–4 together.

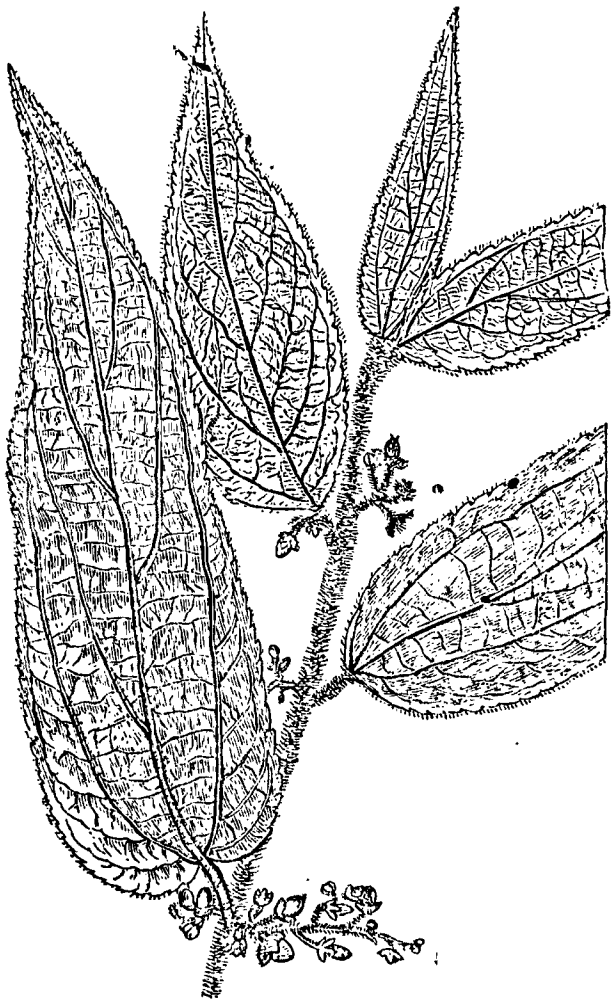


FIG. 24 (A).

TREMA.

Loureiro, flora Cochinchinensis ii. 562 (1790).

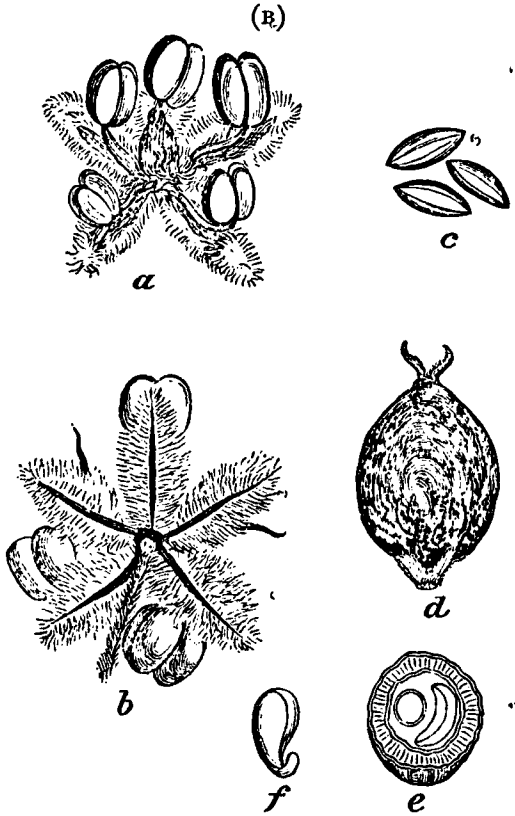
Represented in countries of the intratropical zone, rare out of the tropics, absent in cold countries.

Name from the Greek, in allusion to impressions on the hard inner part of the fruit.

SPECIES:

Trema cannabina.

Loureiro, as above.



Branchlets densely short-hairy; leaves on short stalks, oval-lanceolar, toothed, wrinkled, frequently soft-downy beneath; their two lowest lateral nerves arising from the base; flowers not very numerous on each stalk, uni- and bisexual flowers mostly mixed; segments of the calyx lanceolar-oval; filaments hardly longer than the anthers; style none; fruit oval.

In the vicinity of the Genoa.

Extends through eastern and northern Australia, also South-Asia.

FIG. 24 (B).—*a*, flower, seen from above; *b*, flower, seen from beneath; *c*, pollen-grains; *d*, side-view of fruit; *e*, transverse section of fruit; *f*, embryo; all variously magnified; *e*, 300 times diametrically.

FICUS.

Tournefort, institutiones rei herbariæ p. 662, t. 420 (1700).

Represented by vast numbers of species in intratropical and subtropical countries, rare in extratropic regions, absent in the cold zone.

Name the ancient Latin one for the ordinary Figtree with edible fruits of the countries at the Mediterranean Sea.

SPECIES:

Ficus scabra.

G. Forster, florulæ insularum australium prodromus 76 (1786).

Branchlets short-hairy; leaves oblique, on short stalks, oblong or oval, somewhat acuminate, faintly toothed or almost entire, not of thick consistence, rather brittle, scabrous above, hairy beneath; receptacles axillary, solitary or in pairs, pearshaped or globular, usually stiff-hairy; segments of the calyx 5–6; stamens 2–4, 1 or 2 often semi-sterile; style with an undivided depressed stigma; fruit pearshaped or almost globular, not large.

Near the Genoa.

Extends through East-Australia and to Polynesia.

PARIETARIA.

Tournefort, institutiones rei herbariæ 509, t. 289 (1700).

Represented widely over the globe, but by few species only.

Name from the Latin, indicative of the occasional occurrence of these plants in fissures of walls.

SPECIES:

Parietaria debilis.

G. Forster, florulæ insularum australium prodromus 73 (1786).

Annual, downy; leaves from oval to rhomboidal, roundish or cordate, 3-nerved from the base; bracts in age almost unchanged, linear or lanceolar; bisexual flowers few, their calyx remaining nearly unaltered; calyx of the female flowers finally enlarged, with acuminate lobes; stigmas almost without style.

In many localities, but not frequent, with a predilection for clefts of rocks particularly at springs.

Extends to all the great divisions of the globe except Europe.

AUSTRALINA.

Gaudichaud, Botanique de la voyage autour du monde par Freycinet 505 (1826).

Represented in Africa, extratropic Australia and New Zealand.

Name from the Australian habitation of the species, on which this genus was founded.

SPECIES:

Australina pusilla.

Gaudichaud, as above indicated.

Stems creeping towards the base; leaves scattered, from roundish to rhomboidal and oval or rarely lanceolar, crenate, on conspicuous stalks, hairy; male flowers solitary or 2–4 together on a single stalk; stamen

much exserted; female flowers 2 or more together, almost sessile; stigma long; fruit oval, enclosed.

In ferntree-gullies, particularly on springs and along brooks.

Extends to Tasmania, New South Wales and New Zealand.

VINIFERÆ.

Jaume de St. Hilaire, expositiones familiarum ii. 48, t. 79 (1805).

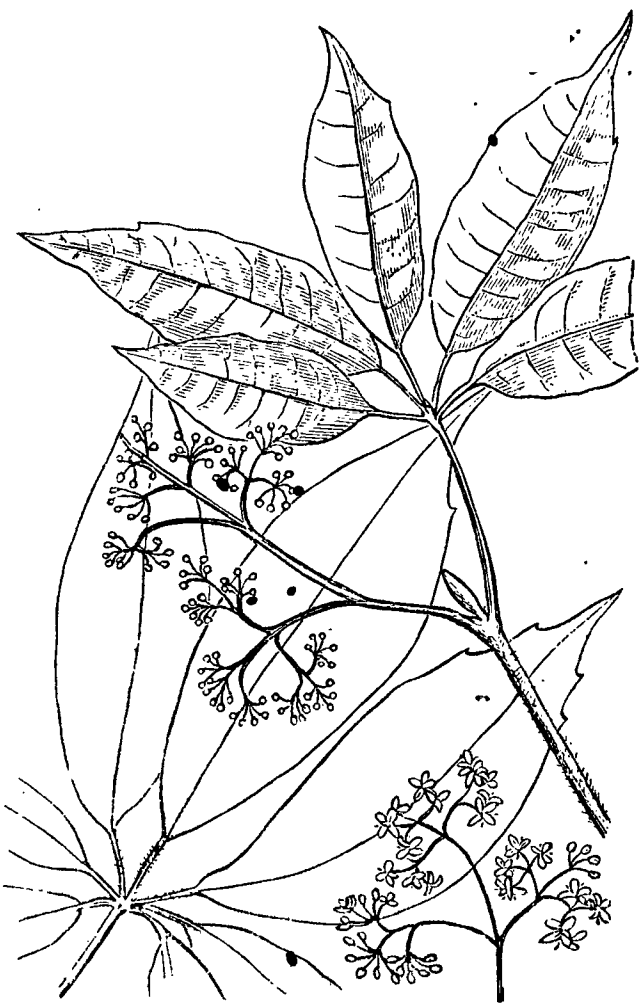


Fig. 25 (a).

GENUS:

Vitis: Petals free or at the summit coherent. Stamens disunited. Ovary usually 2-celled, with 2 ovules in each cell. Berry 1–4-seeded.—Woody climbing or very rarely herbaceous plants, usually provided with tendrils; leaves either simple or compound; flowers copiously joined, small, quite often partly unisexual

VITIS.

Tournefort, institutiones rei herbariæ 613, t. 384 (1700).

Represented by numerous species in all warm countries, by few in the temperate zone, and extending northward to Canada and Japan, southward to Gippsland.

Name, that in ancient Latin for the Grapevine (Vitis vinifera of Linné, or Vitis sativa of Plinius).

SPECIES:

Vitis hypoglauca.

F. v. Mueller, Plants indigenous to Victoria i. 95 (1860).

Arborescent; evergreen; leaves on long stalks; leaflets usually 5, rarely 3–4 or 6–7, of firm consistence, from lanceolar to oval, acuminate, entire or towards the apex toothed, closely net-veined, paler or glaucous beneath; their stalklets conspicuous, radiating; flowers in panicles; calyx truncate; petals free, yellow, as well as the stamens 4; style short, conical; berry blue-black, rather large, spherical.

Along forest-streams of East Gippsland, not known west of the Snowy-River.

Extends to New South Wales and Queensland.

Species-name from the Greek, alludes to the pale underpage of the leaflets.

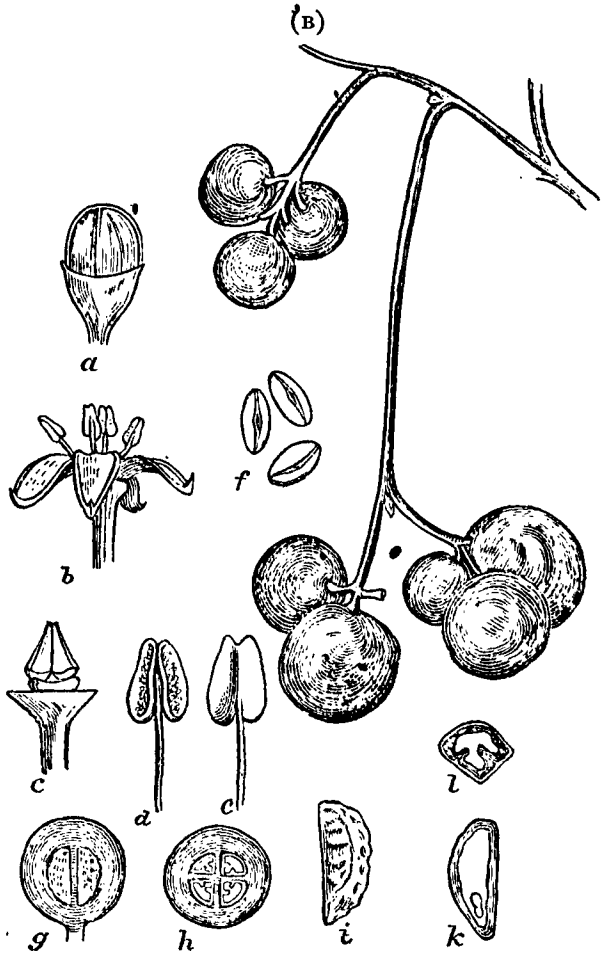


FIG. 25 (B).—*a*, flower-bud; *b*, expanded flower; *c*, calyx with pistil; *d*, front-view of stamen; *e*, back-view of stamen; *f*, pollen-grains; *g*, longitudinal section of fruit; *h*, transverse section of fruit; *i*, seed; *k* and *l*, longitudinal and transverse section of the same; all variously enlarged, *f* 300 times diametrically.

SAPINDACEÆ.

A. L. de Jussieu, genera plantarum 246 (1789).

Name from the genus Sapindus, which contains the Soaptree of West-India and Central-America.

GENERA:

Dodonæa: Flowers partly or mostly unisexual, nearly symmetrical. Sepals 3–6, rarely 2. Petals none. Stamens about double the number of the sepals; filaments short; anthers rather narrow, fixed at the base. Disk hardly developed. Styles twisted into 1. Ovary central, 2–6-celled, with 2 ovules in each cell. Fruit capsular, membranous or nearly crustaceous; valves frequently separating from the septa, the latter remaining attached to the axillary persistent column; or not frequently the septa seceding from the column, remaining attached to the valves, separating into two plates and long retaining the seeds; or very rarely the septa separating neither from the column or valves, the latter persistent and irregularly ruptured. Seeds small, lenticular or compressed-globular, without appendage. Embryo circinately coiled.—Evergreen shrubs, often viscid; leaves scattered, simple or pinnate; flowers small; fruit-valves angular, often expanded into a dorsal membranous appendage.

Nephelium: Flowers nearly symmetrical, often partly unisexual. Calyx short, with 4–5 or rarely more lobes or teeth. Petals 4–5, seldom more, very small, usually inside with 1 or 2 conspicuous basal appendages, or not developed. Disk complete. Ovary central, 2–3-celled, with one ovule in each cell. Styles partly connate. Fruit 2–3-lobed, 2–3-celled, indehiscent or irregularly ruptured, one or two of the divisions occasionally undeveloped. Seeds large, turgid, enveloped in a succulent arillar appendage. Albumen none. Cotyledons thick, plane-convex.—Evergreen trees, rarely shrubs; leaves scattered, pinnate, very seldom simple; flowers small, in panicles; fruits mostly hard.

DODONÆA.

Linné, genera plantarum 341 (1737).

Represented richly in Australia, very scantily in South-Asia, Africa, the warmer parts of America and also in Polynesia, not in Europe.

Name in memory of Rembert Dodoens of Mechlin, physician to the Emperors Maximilian II. and Rudolph II., also an author of eminence on plants.

SPECIES:

Dodonæa viscosa.

Linné, mantissa plantarum altera 149 et 228 (1771).

Leaves from oval- to narrow-lanceolar or verging into a wedgeshaped or spatular form, entire or repand or obscurely denticulated, rarely

some pinnate; sepals generally 4, about as long as the almost oval anthers; style not much elongated; fruit generally 3-valved; valves seceding from the septa, a broad membrane rounded at either extremity extending from their summit to their base; seeds opaque.

On rocky and bushy places particularly along the banks of water-courses or springs, but also on dry ranges and in the desert.

Extends to most parts of Australia, also to New Zealand, and through the whole areas of the genus, as indicated above.

Dodonæa triquetra.

Wendland, Botanische Beobachtungen 44 (1798).

Tall, hardly viscid; branchlets compressed-angular; leaves long, lanceolar or verging into an oval or oblong form, entire; stalklets of the flowers long; sepals several times shorter than the slender anthers; style elongated; fruit 3-valved; valves separating from the septa, a rather narrow membrane blunt at either extremity extending from their summit to their base; seeds shining.

On ridges and mountains at or near the Genoa, particularly among granite-rocks.

Extends to New South Wales and Queensland.

Species-name from the unusually angular branchlets.

Dodonæa procumbens.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 8 (1854).

Dwarf, diffuse or prostrate, hardly viscid; leaves short, wedge-shaped or somewhat spatular, generally toothed or lobed at the summit; stalklets of the flowers rather short; sepals generally 5, about as long as the anthers; style much elongated; fruits 2- or 3-valved, without prominent decurrent membranes.

In subsaline places at the Glenelg-River, the Serra-Ranges and Grampians, also on sterile hills near the Snowy-River and of Manaroo.

Extends to South Australia and New South Wales.

Dodonæa truncatiales.

F. v. Mueller, Plants indigenous to Victoria i. 226 (1862).

Tall, hardly viscid; branchlets compressed-angular; leaves long, narrow-lanceolar, entire or slightly denticulated; sepals 4, little longer than the quadrangular-ovate anthers; fruit 4-valved, occasionally 3-valved; valves seceding from the septa, upwards dilated, almost broader than long, towards the summit expanded into a very broad and truncate membrane.

On the wooded banks of the Genoa.

Extends to New South Wales.

Species-name from the abruptly terminating fruit-appendages.

Dodonæa Baueri.

Endlicher, in Huegel's enumeratio plantarum Novæ Hollandiæ austro-occidentalis 13 (1837).

Somewhat viscid; leaves small, roundish or almost oval, denticulated, often waved, occasionally truncate at the summit; stalklets of the flowers short, recurved, solitary or 2 or rarely few together; sepals 4–5, about as long as the anthers; style slightly elongated; fruit small, broader than long, 4–5- seldom 3-valved; valves seceding from the septa, keeled at the back, the truncate narrow membrane extending neither to their summit nor their base.

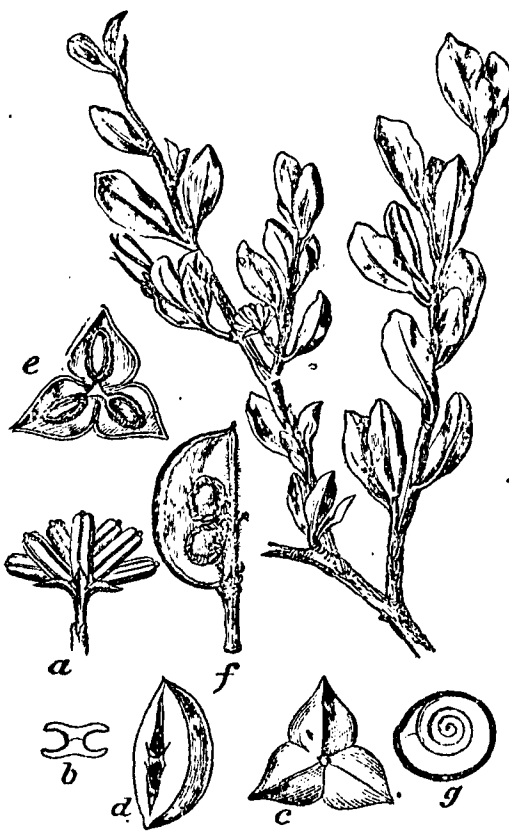
In the sandy desert-country at and towards the Murray-River.

Extends to New South Wales and South Australia.

Dodonæa bursarifolia.

Behr et Mueller, in the Transactions of the Victorian Institute i. 8 (1855).

Glabrous, scarcely viscid; leaves small, of thick consistence, wedge-shaped-oval, entire or slightly repand, usually rounded at the summit; their veins indistinct; stalklets of the flowers short, solitary or 2 or 3 together; sepals narrow, shorter than the pale anthers; fruit 3–4-valved; the valves very narrowly or hardly keeled; septa permanently attached to the valves, seceding from the filiform central axis, separating into two plates; seeds shining.



In the desert-country at and towards the Murray-River.

Extends to New South Wales and South Australia.

Species-name in allusion to the resemblance of the leaves to those of Bursaria spinosa.

FIG. 26.—*a*, side-view of staminate flower; *b*, transverse outline of an open anther; *c*, fruit, seen from above; *d*, one of the divisions of the fruit, separated; *e*, transverse section of fruit; *f*, longitudinal section of a fruit-division; *g*, section of seed, exhibiting the coiled embryo; all variously magnified.

Dodonæa stenozyga.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 98 (1859).

Glabrous, slightly viscid ; leaves pinnate, few, rarely simple ; leaflets emanating towards the summit of the narrow rachis, few or rarely several, opposite or scattered, short, linear, channelled ; stalklets of the flowers solitary or 2 or 3 together ; style short ; fruit 4–5-valved ; valves seceding from the septa ; a membrane rounded at either extremity and upwards dilated extending from their summit to their base ; seeds opaque.

In the deserts on the Wimmera, Loddon, Avoca and Murray-River.

Extends to New South Wales, South- and West-Australia.

Species-name from the narrow and often paired leaflets.

Dodonæa boronifolia.

G. Don, General System of Dichlamydeous Plants i. 674 (1831).

Downy or almost glabrous, viscid ; leaves pinnate ; joints of the rachis dilated ; leaflets opposite in 3–7 pairs, oblique wedgeshaped or rhomboid-oval, toothed from above the middle or at the apex, much dotted, flat or somewhat recurved at the margin ; anthers about as long as the sepals ; fruit generally 4-valved ; valves seceding from the septa, a broad membrane rounded at either extremity extending from their summit to their base ; seeds opaque, turgid.

On granitic rocks of the mountains on the Goulburn- and Ovens-Rivers, the Genoa, the Hume-River.

Extends to New South Wales and Queensland.

Species-name from the similarity of the leaves to those of some pinnated Boronias.

NEPHELIUM.

Linné, mantissa plantarum 18 (1767).

Represented in southern and eastern Asia, in Polynesia and various parts of Australia.

Name applied by Appulejus to the Burdock, and chosen by Linné for this genus, because the fruit of the original species is prickly, somewhat like the flowerhead of a Burdock.

SPECIES:

Nephelium leiocarpum.

F. v. Mueller, in the Transactions of the Philosophic Institute of Victoria iii. 25 (1858).

Branchlets finely downy ; rachis of leaves two-edged ; leaflets 2–6, large, mostly scattered, of thick consistence, from lanceolar to oval, entire or distantly serrated, mostly acuminated, beneath paler and opaque ;

teeth of the calyx conspicuous, deltoid or semilanceolar; petals minute, by infraction of their lower angles appendiculate; stamens 8; filaments short, glabrous; styles concrete to the summit; fruitlets 2–4, smooth, nearly globular, outside and inside glabrous, disjointed at or towards the summit, breaking transversely; seeds depressed-spherical; their emersed portion shining-black; arillar envelope large, scarlet.

In forests on the Genoa.

Extends to New South Wales and Queensland.

Species-name to express the characteristic smoothness of the fruit.

Nephelium oleæfolium.

Heterodendron oleæfolium; Desfontaines in mémoires du muséum d'histoire naturelle iv. 9, t. 3 (1818).

Shrubby or somewhat arborescent, subtle-downy; leaves simple, from linear-lanceolar to oblong or rarely oval, always entire; teeth of the calyx of uncertain number, very minute, confluent or obliterated; petals none; stamens 6–15; filaments short, glabrous; styles very short, connate; fruitlets 2–4, smooth, nearly globular, seldom all advancing to maturity; seeds ovate-globular; arillar envelope large, scarlet.

In the desert-country at and towards the Wimmera, Loddon, Avoca and Murray-River, especially in the limestone-formation.

Extends to New South Wales, Queensland, South- and West-Australia.

Species-name in allusion to some resemblance of the leaves to those of the Olivetree (Olea Europæa of Linné).

CELASTRINEÆ.

R. Brown, Appendix to Flinders's Voyage p. 554 (1814).

GENUS:

Celastrus: Calyx 4–5-lobed. Petals and stamens 4–5, free. Anthers bursting longitudinally. Disk conspicuous. Ovary 2–4-celled, with 2 erect ovules in each cell. Styles connate. Fruit 2–4-valved; the valves bearing the septum along the middle. Seeds usually provided with an arillar appendage. Albumen large. Embryo straight; cotyledons nearly always broad; radicle basal.—Shrubs, often climbing, occasionally thorny; leaves scattered or fascicled; flowers small, often partly unisexual.

CELASTRUS.

Linné, genera plantarum 59 (1737).

Represented in South- and East-Asia, Africa, South-Europe and North America, there extending to Canada.

Name from the Greek, applied by Theophrastos to a bush of the Olive-tribe, because that ripens late its fruit, and for the same reason the name transferred to the present genus.

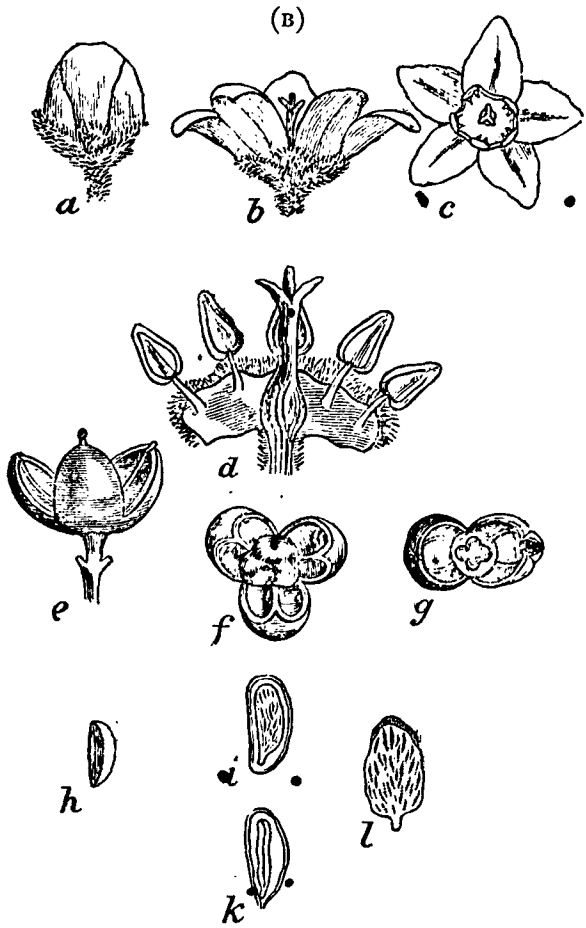
SPECIES:

Celastrus australis.

Harvey et Mueller, in the Transactions of the Philosophic Society of Victoria i. 41 (1854).

Tall, twining, evergreen ; leaves from oval to lanceolar, on short stalks, glabrous, with denticulated or almost entire margin ; flowers in mostly terminal panicles ; calyx downy, its lobes short and blunt ; petals white, oval ; margin of disk free from calyx and ovary ; anthers

FIG. 27 (A).



oval; filaments and style short; stigmas 3, narrow; fruit normally 3-valved, roundish; seeds enveloped in the orange-colored arillar covering.

In forest-ravines on the Snowy-River and some of its tributaries, thence to the south-eastern boundaries of the colony.

Extends to New South Wales and Queensland.

FIG. 27 (B).—*a*, side-view of unexpanded flower; *b*, side-view of expanded flower; *c*, flower, seen from above; *d*, disk with its stamens drawn out, also the pistil; *e*, side-view of fruit; *f*, fruit, seen from above; *g*, abnormal 2-valved fruit; *h*, seed; *i*, longitudinal section of a more enlarged seed; *k*, tangential section of the same; *l*, embryo; all variously enlarged.

STACKHOUSIACEÆ.

R. Brown, Appendix to Flinders's Voyage 555 (1814).

GENUS:

Stackhousia: Calyx 5-lobed. Petals 5, inserted at the margin of the calyx-tube, connate into a tube, their free summits overlapping in bud. Stamens 5, free; anthers opening with longitudinal slits. Ovaries 2–5, usually 3, coherent, each with one erect ovule. Styles mostly connate, with simple stigmas. Fruitlets 3, seldom fewer or more, always indehiscent, finally seceding from the central axis. Seed without appendage. Albumen not starchy, surrounding the embryo.—Herbs or somewhat woody plants; leaves scattered, entire; flowers fragrant, bracteolate; calyx small; stamens enclosed, of unequal length.

STACKHOUSIA.

Smith, in the Transactions of the Linnéan Society iv. 218 (1798).

Represented in most parts of Australia, also in New Zealand and the Philippine Islands.

Name in honor of J. Stackhouse of Cornwall, a meritorious writer on British Seaweeds, also on the plants of Theophrastos.

SPECIES:

Stackhousia pulvinaris.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria i. 101 (1855).

Glabrous, very depressed; branches numerous, intricate and rooting; leaves linear-oblong; the flowers singly terminal on the branchlets; the petals cream-colored or yellowish, blunt; anthers glabrous; fruitlets smooth or somewhat wrinkled.

In the higher alpine regions.

Extends to New South Wales and Tasmania.

Species - name from the cushion-like patches formed by this plant.

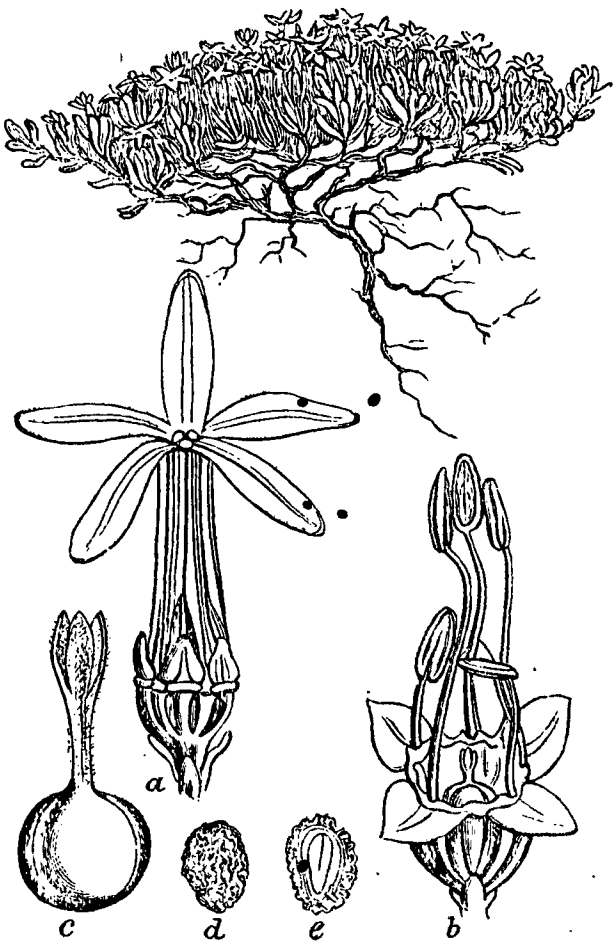


FIG. 28.—*a*, side-view of a flower; *b*, flower, the corolla removed; *c*, pistil; *d*, seed; *e*, the same, cleft longitudinally; all magnified.

Stackhousia viminea.

Smith, in Rees's Cyclopædia xxxiii. (1819).

Glabrous, erect, slender; leaves from oblong to linear or reduced to minute scales; flowers in interrupted mostly long spikes, small, solitary or oftener clustered; petals acute, yellowish or somewhat greenish; fruitlets small, usually rough.

On the Grampians and Hume-River.

Extends to most other parts of Australia but sparsely only.

Species-name in reference to the slender and scantily leafy stems.

Stackhousia linarifolia.

All. Cunningham, in Field's New South Wales 365 (1825).

Glabrous, erect; leaves from oval-lanceolar to almost linear; spikes at first dense, with singly separated flowers; petals cream-colored, blunt; fruitlets reticular-wrinkled.

As well on sterile as fertile soil of the lowlands and mountains, ascending to subalpine elevations.

Extends to East- and South-Australia, also Tasmania.

Stackhousia spatulata.

Sieber, in Sprengel's curæ posteriores 124 (1827).

Glabrous, erect or spreading; leaves thick, from oval to oblong or spatular; spikes at first dense, with singly separated flowers; petals cream-colored, blunt; fruitlets 3–5, each with three longitudinal acute or membranously extended angles.

On the coast, as well on rocks as on sands.

Extends as an exclusively maritime plant from Queensland to South Australia and also to Tasmania.

FRANKENIACEÆ.

A. de St. Hilaire, bulletin de la société philomatique 22 (1815).

GENUS:

Frankenia: Calyx 4–5-cleft. Petals 4–5. Stamens 3–10, quite free. Stigmas 2–5, elongated. Valves of the fruit 2–5.—Saline or desert-plants; leaves and flowers small; petals usually pink.

FRANKENIA.

Linné, genera plantarum 129 (1837).

Represented in most countries of the globe.

Name in honor of Dr. J. Frankenius, Professor of Medicine at Upsala, but in 1729 the genus dedicated by Micheli to J. S. Franchi.

SPECIES:

Frankenia lævis.

Linné, species plantarum 331 (1753).

Half-shrubby; leaves opposite or 4 in a whorl, at first fasciculate, from oval to lanceolate-linear, recurved or revolute at the margin; calyx sessile, with generally 5 rarely 4 or 6 short lobes; narrow base of the petals enclosed; stamens 5 or 6, rarely 4; stigmas 3, rarely 2; fruit few-seeded.

At saline marshes on the coast; more frequent on salty or sandy depressions of the desert at and towards the Murray River.

Extends not only over the greater part of Australia, but also to Africa, Asia and Europe, but not to the coldest regions.

PLUMBAGINEÆ.

A. L. de Jussieu, genera plantarum 92 (1789).

Name from the genus Plumbago, adopted by Tournefort from Plinius, the root of the South European species producing a lead-colored tinge.

GENUS:

Statice: Calyx generally funnel-shaped and scarious, with 5 or rarely 10 lobes. Petals free or at the base connected, rarely connate into a conspicuous tube. Stamens inserted at the base of the petals, rarely long-adnate to them. Styles disjointed, gradually passing into the slender stigmas. Fruit imperfectly dehiscent or ruptured.—Herbs, mostly perennial or half-shrubs; leaves often broad, seldom lobed, never toothed; spikes mostly panicled.

STATICE.

Linné, genera plantarum 88 (1737).

Represented in many countries, but most copiously in the eastern hemisphere and particularly around or near the Mediterranean Sea.

Name from Plinius for a plant of this order, Armeria vulgaris of Willdenow, the British Thrift.

SPECIES:

Statice Taxanthema.

Rœmer et Schultes, systema vegetabilium vi. 798 (1820).

Leaves spatular- or wedgeshaped-oval, large, all crowded at the summit of the root; stems and branches angular; flowers 5 or less

together, forming numerous one-sided almost straight spikes; bracts acute, at the margin membranous; limb of the calyx transparent, folded, pale-pink, produced into short acute lobes; petals yellow; filaments glandless; fruit slender; seed ellipsoid.

Extends to Tasmania, New South Wales and Queensland, also to New Caledonia, China and Japan.

Only one other species is known from Australia.

FIG. 29 (A).

(B)

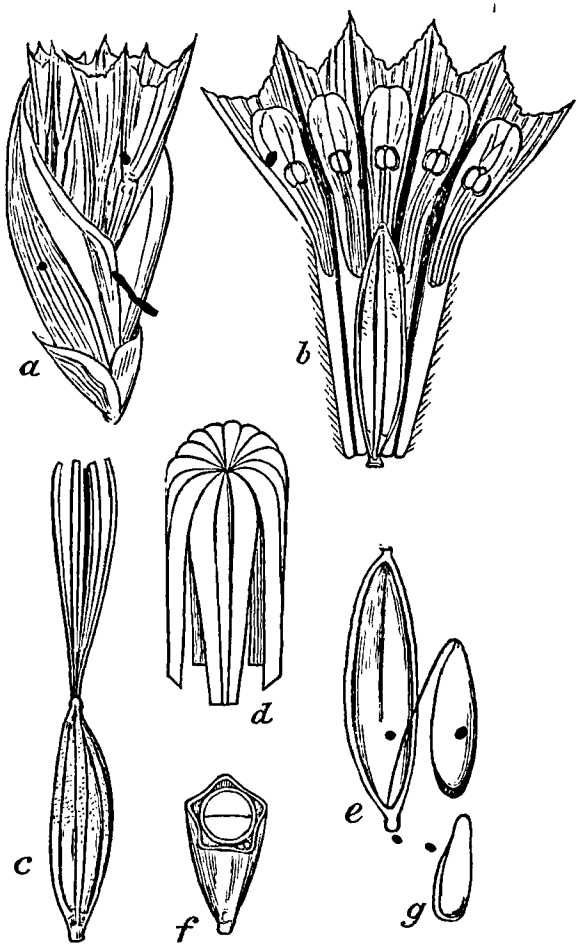


FIG. 29 (B).—*a*, side-view of a spikelet with its bracts; *b*, flower laid open, the stigmas removed; *c*, pistil; *d*, fruit-valves; *e*, longitudinal section of fruit, the seed drawn forward; *f*, transverse section of fruit; *g*, embryo; all variously magnified.

PORTULACEÆ.

A. L. de Jussieu, genera plantarum 312 (1789).

Name from the leading genus of this order, Portulaca, the English Purslain, originating with Plinius, who curiously derived it from the form of the leaves, doorshaped in miniature.

GENUS:

Claytonia: Sepals 2. Petals 5, rarely fewer or more. Stamens 5 and then opposite to the petals, or indefinite in number. Ovary free, with few or many ovules. Styles united into 1. Stigmas 3. Fruit 3-rarely 4-valved. Seeds without an appendage. Embryo almost fully encircling the albumen.—Herbs or rarely half-shrubs; leaves scattered or opposite, or those at the root crowded, without stipules; flowers of most species ephemeral.

CLAYTONIA.

Gronovius, in Linné's genera plantarum 339 (1737).

Name in memory of Dr. T. Clayton, a Kentish physician, one of the first who examined the plants of Virginia.

SPECIES:

Claytonia Australasica.

J. Hooker, icones plantarum 293 (1840).

Perennial, glabrous, floating or creeping or forming tufts; leaves compressed-cylindric or almost linear, scattered, clasping at their base; stalks with 1, 2 or few flowers; stalklets considerably longer than the sepals, bearing at the base a small membranous bract; sepals persistent, roundish; petals 5, white, blunt; stamens 5; style about as long as the stigmas; fruit nearly globular, hardly longer than the sepals, pale; seeds 1–3, black, smooth, shining.

On the margins of watercourses, or on irrigated or springy places, or in moist clefts of rocks, from the lowlands to the highest Alps.

Extends through a great part of extratropic Australia, also to New Zealand.

Referable like all the other Australian species to Calandrinia, if that genus is to be maintained on account of the very fugacious petals, scattered leaves and generally indefinite number of stamens.

Claytonia calyptrata.

F. v. Mueller, fragmenta phytographiæ Australiæ iii. 89 (1862).

Annual, glabrous; leaves turgid, spatular- or linear-oblong, seldom ellipsoid, crowded at the root, scattered at the stems; racemes axillary and terminal; stalklets soon distant, longer than the flowers and in age refracted; bracts small, acuminate, mostly opposite; sepals persistent, oval; petals 5, small, red; stamens 5 or fewer, seldom more; style very short; fruit oval or somewhat conical, pale, often longer than the sepals; seeds numerous, cordate-lenticular, smooth, shining, comparatively large.

„On rocks, particularly on moist and mossy spots, also on sandlands especially at river-banks or moist depressions.

Extends widely through extratropic Australia.

Species-name from the petals, which shrivel into a cap-like covering over the fruit.

Claytonia pygmæa.

F. v. Mueller, fragmenta phytographiæ Australiæ iii. 89 (1862).

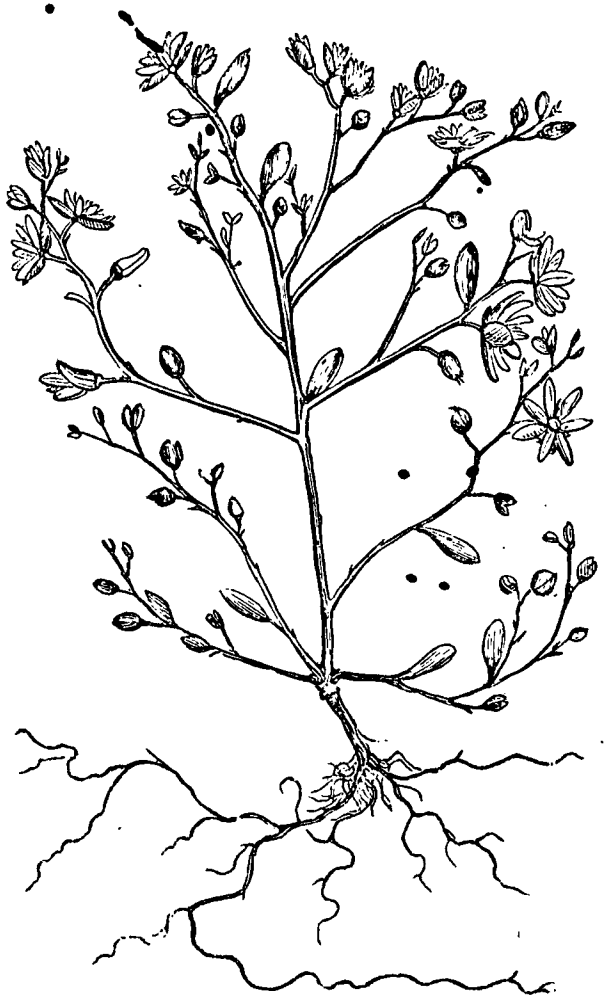
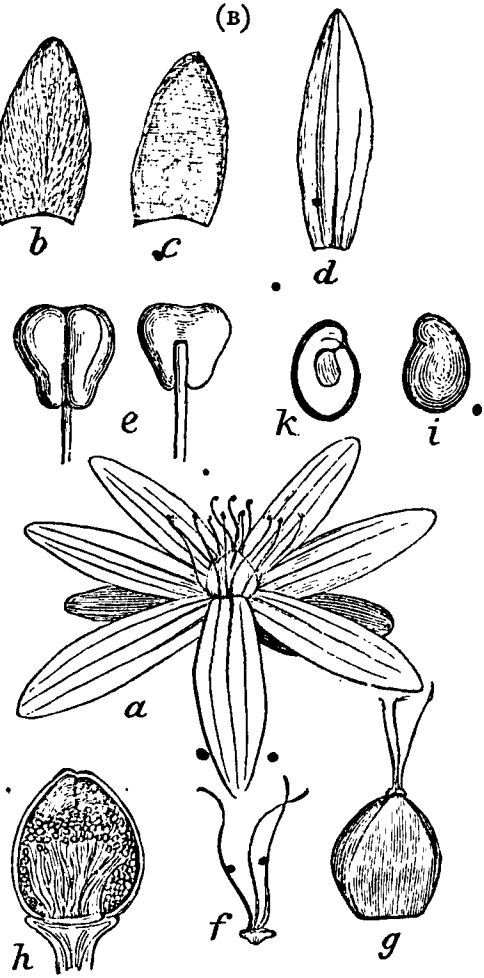


Fig. 30 (A).



Annual, glabrous; stems very short; leaves extremely turgid, oval or oblong, scattered; racemes terminal, few-flowered; stalklets very short; sepals turgid, succulent, deciduous, oval, comparatively large; petals 4–7, rather acute; stamens 4–10; stigmas without style; fruit hard, oval-globular, usually black, cleft into valves only at the summit; seeds many, minute, turgid, almost kidney-shaped, shining, dotted with subtle impressions.

On moist sand or rocks; for instance at Port Phillip, the Grampians and adjoining mountains, the Glenelg- and Murray-River.

Extends to New South Wales, South- and West-Australia.

FIG. 30 (B).—*a*, flower expanded; *b*, and *c*, front- and back-view of a sepal; *d*, petal; *e*, front- and back-view of anther; *f*, stigmas; *g*, fruit; *h*, longitudinal section of fruit; *i*, seed; *k*, longitudinal section of a seed.

Claytonia pusilla.

Calandrinia pusilla, Lindley, in Mitchell's Tropical Australia 360 (1848).

Annual, glabrous; leaves turgid, from oblong to linear, crowded at the root, scattered and few at the stems; racemes mostly terminal; stalklets soon distant, longer than the flowers and in age refracted; bracts mostly minute, scarious and opposite; sepals persistent, roundish; petals 5–6, small, red; stamens 5–8, seldom more; stigmas longer than the style; fruit pale, almost cylindrical towards the summit, much exserted; seeds very numerous, minute, turgid, almost kidneyshaped, densely dotted with seriated impressions.

On the steppes at and near the Murray-River and Wimmera.
Extends over a great part of extratropical Australia.

Claytonia corrigiolacea.

Calandrinia corrigioloides, F. v. Mueller, in Bentham's Flora Australiensis i. 175 (1863).

Annual, glabrous, prostrate; leaves almost linear, crowded at the root, scattered at the stem; racemes rather short, axillary and terminal; bracts minute; stalklets short, often thickened towards the summit; sepals extremely small, persistent; petals 5–6, minute, white; stamens usually 3; style very short; fruit pale, upwards cylindrical, much exserted; seeds 1–4, comparatively large, lenticular, black, shining, smooth.

On desert-sands at and near the Murray-River and Wimmera.
Extends to New South Wales, South- and West-Australia.
Species-name from the resemblance to the European Corrigiola litoralis of Linné, that name again in allusion to the strap-like stems.

CARYOPHYLLEÆ.

Scopoli, introductio ad historiam naturalem 329 (1777); from B. de Jussieu (1759).

Name from Caryophyllus, adopted by l'Eluse, Caps. Bauhin, Malpighi, Loesel, Ray, Morison, Tournefort and some other writers prior to Linné's time for the genus Dianthus, one species of which, D. Caryophyllus, the South European Carnation or Clove-pink, retaining that name, as now emblematic for this whole order of plants.

GENERA:

Saponaria: Sepals 5, connate. Petals 5, with or without appendage. Stamens 10. Ovary with many ovules. Styles 2, rarely 3. Fruit 4- rarely 6-valved.—Herbs or half-shrubs; leaves without stipules.

Spergularia: Sepals 5, rarely 4, free. Petals as many as sepals or none. Stamens 10, occasionally less; exterior filaments with two glands at the base. Ovary with many ovules. Styles 3, rarely 2 or 5. Valves of the fruit as many as styles, when 5 alternate with the sepals.—Small herbs; leaves narrow, with scarious stipules.

Polycarpon: Sepals 5, keeled. Petals as many as sepals, minute. Stamens 3–5, opposite to sepals. Ovary with numerous ovules. Styles 3, united at the base. Valves of the fruit as many as styles.—Small herbs; leaves with stipules; flowers in cymes, very small.

Sagina: Sepals 4–5, free. Petals as many as sepals or none. Stamens 4–5, opposite to the sepals or 10. Ovary with many ovules. Styles 4–5, alternate with the sepals. Valves of the fruit as many as styles, entire, opposite to the sepals.—Minute plants; leaves narrow, without stipules.

Stellaria: Sepals 5, rarely 4, free. Petals as many as sepals, bifid, seldom jagged or none. Stamens twice the number of the sepals, rarely fewer. Styles 3, rarely 2 or 4–5. Ovary with few or many ovules. Valves of the fruit twice as many as styles.—Herbs, usually weak; leaves without stipules; petals always white.

Colobanthus: Sepals 4–5, free. Petals none. Stamens 4–5, alternate with the sepals. Styles 4–5, opposite to the sepals. Ovary with numerous ovules. Valves of the fruit as many as styles, alternate with the sepals.—Small perennial plants; leaves without stipules; flowers minute.

Scleranthus: Sepals 4–5, connate. Petals none. Stamens 1–10, inserted at the orifice of the calyx, with or without additional sterile stamens. Styles 2. Ovary with 1 rarely 2 ovules. Fruit valveless, permanently enclosed in the tube of the calyx.—Small plants; leaves narrow, without stipules; calyx small, supported by persistent bracteoles, articulated at the base.

SAPONARIA.

Linné, genera plantarum 130 (1737); from Camerarius (1586).

Represented (inclusive of Gypsophila) in Europe and extratropic Asia, rarely in North-Africa, Australia and New Zealand.

Name from the soapy principle (Saponin) contained in the European and Asiatic Saponaria officinalis, the British Soap-wort, on which the genus was mainly founded.

SPECIES:

Saponaria tubulosa.

Gypsophila tubulosa; Boissier, diagnoses plantarum orientalium i. 11 (1842).

Annual, glandular-downy, erect; leaves narrow-linear; stalklets solitary, spreading, longer than the flowers; calyx bellshaped-cylindrical, with short and blunt lobes; petals spatular- or linear-wedgeshaped, retuse; stamens considerably shorter than the petals, all fertile; fruit ellipsoid; funicular column raised to the middle of the cavity; seeds seriate-granular; radicle prominent.

In sandy localities very sparsely as well on mountains as on lowlands, verging into the desert.

Extends widely through extratropic Australia, also to New Zealand, Turkey and Arabia.

POLYCARPON.

Læffling, in Linné's systema naturæ, editio decima 881 (1759).

Name first chosen by Appulejus, indicating the copiousness of fruits, with which the plant is loaded.

Represented in many of the temperate and intratropical regions of the globe.

SPECIES:

Polycarpon tetraphyllum.

Linné, systema vegetabilium, editio decima tertia a Murray p. 111 (1774).

Annual, glabrous; leaves spatular-oval, opposite or quaternate; stipules and bracts acuminate, entirely scarious; stalklets of the flowers short; sepals pointed, longer than the petals; stamens 3, sometimes 5, always extremely short; cells of the anthers broad-ellipsoid; style very short; fruit minute; seeds rough; embryo much curved.

On very many localities particularly in light soil, not ascending to cold mountain-regions.

Extends nearly all round the world within the temperate and warm zone.

Species-name from the position of the leaves, often in four around the branches.

SPERGULARIA.

Persoon, synopsis plantarum i. 504 (1805).

Represented in many parts of the globe.

Name to indicate the affinity to Spergula, the genus of the British Spurrey, which again originated by Dodonæus, from Spuerie, the vernacular appellation of this herb in Brabant.

SPECIES:

Spergularia rubra.

Cambessedes, in St. Hilaire's flora Brasiliæ meridionalis ii. 179 (1829).

Leaves linear-filiform; stipules entire, seldom bifid; stalklets rather thick, as well as the sepals usually glandular-downy; flowers rather large; dorsal portion of the outer sepals broader than their membranous margin; styles and valves of the fruit 3; seeds often surrounded by a pale membrane.

On coast-meadows and also on sandy and particularly subsaline ground, also in the saltbush-country of the desert; rare on mountains.

Extends to nearly all countries of the temperate subarctic and subtropic zones.

SAGINA.

Linné, genera plantarum 118 (1737).

Represented in the temperate and colder regions of the globe.

Name from the Latin, because these little weeds, shining and somewhat succulent, seem well nourished; but originally applied in ancient literature as a species-name of the bird-fattening Chickweed (Stellaria media of Villars).

SPECIES:

Sagina procumbens.

Linné, species plantarum 128 (1753).

Perennial; stems mostly procumbent, much branched; leaves narrow-linear, acute; flowerstalks soon curved at the summit, finally again erect; sepals 4, seldom 5, oval-roundish, spreading in age; petals less than half as long as the sepals, seldom none; stamens 4, rarely 5; styles recurved; fruit somewhat longer than the calyx.

In subalpine valleys near the Hume- and Snowy-River; also in a few places of the lowlands.

Extends to most of the countries with a temperate or cold clime of both hemispheres.

Sagina apetala.

P. Arduino, animadversionum botanicarum specimen alterum 22, t. 8, f. 1 (1764).

Annual; stems short, mostly erect or ascendant; leaves short, narrow-linear, pointed; flowerstalks usually permanently erect; sepals 4, oval, the two outer often slightly pointed, all finally spreading; petals very minute or none; stamens 4; fruit longer than the sepals.

On coast-meadows, not frequent also on saline depressions occasionally inland.

Extends to Tasmania, South Australia and New South Wales, and beyond Australia to Europe, West-Asia, North-Africa and seemingly also North-America.

STELLARIA.

Linné, species plantarum 421 (1753).

Represented in nearly all extratropic countries, within the tropics almost restricted to cool mountain-rivers.

Name from the star-like aspect of the flowers, vernacularly rendered Starwort.

SPECIES:

Stellaria pungens.

Brogniart, botanique de la voyage autour du monde sur la Coquille par Duperrey, t. 78, (1826).

Perennial; branchlets mostly downy; leaves rigid, from oval- to linear-lanceolar, pungent, channelled, shining, all sessile; stalks 1-flowered, solitary, mostly axillary, usually downy; sepals narrow-lanceolar, pungent, 3-nerved; shorter than the petals.

In rocky and sandy places throughout a great part of the colony, ascending the Alps.

Extends to the eastern part of South Australia, to Tasmania and New South Wales.

Stellaria glauca.

Withering, arrangement of the vegetables naturally growing in Great Britain i. 420 (1776).

Perennial, smooth or slightly scabrous; leaves linear, acute, usually long; stalks 1-flowered, axillary, much elongated, solitary; sepals 3-nerved, acute, united at the base, little shorter than the petals; anthers red.

In moist localities, very sparse.

Extends to Tasmania, South Australia, New South Wales and South-Queensland, and beyond Australia to Europe and a great part of Asia.

Species-name from the frequent but not constant grey-green color of the foliage.

Stellaria flaccida.

Hooker, Companion to the Botanic Magazine i. 275 (1835).

Perennial, tall; stems and branches glabrous or sparsely downy; leaves from oval to lanceolar, acute, of tender consistence; stalks 1-flowered, axillary, very long; sepals oval-lanceolar, acute, their lateral nerves faint; petals and stamens longer than the sepals; anthers purple, finally black; styles rather long.

In moist forest-regions and along shaded watercourses from the lowlands up to the Alps.

Extends to Tasmania and New South Wales.

Stellaria multiflora.

Hooker, Companion to the Botanic Magazine i. 275 (1835).

Annual, glabrous, never tall; leaves narrow-lanceolar, small, mostly sessile; stalks 1-flowered, axillary, solitary, often shorter than the leaves; sepals narrow-lanceolar, acute, 3-nerved; petals undeveloped or only rudimentary; stamens 5–10, much shorter than the sepals; anthers yellow.

As well in the lowlands as in the mountain-regions, ascending the Alps.

Extends through the coast-districts of extratropic Australia.

COLOBANTHUS.

Bartling, reliquiæ Haenkeanæ ii. 13, t. 49 (1830).

Represented in the alpine parts of South America, the island of Amsterdam, Auckland's and Campbell's Island, New Zealand, Tasmania, Victoria and the Alps of New South Wales.

Name from the Greek, in allusion to the incomplete flower, the petals being absent.

SPECIES:

Colobanthus Billardieri.

Fenzl, Annalen des Wiener museums i. 48 (1838).

Almost stemless; leaves long, rigid, linear, very acute, flat except their clasping base; flowers singly on long rigid stalks; sepals 5, oval-lanceolar, very acute, longer than the stamens; fruit oval-globular; seeds numerous.

On rocky hills near Warrnambool (Hannaford).

Extends to Tasmania, New Zealand, some islands of the South Sea and perhaps the Andes.

Colobanthus Benthamianus.

Fenzl, as above.

Glabrous, forming ample moss-like tufts; leaves crowded, short, rigid, squarrose, triangular, almost awl-shaped, somewhat channelled; flowers on very short stalks; sepals 5, rarely 4, from a broad base lanceolar, pungent, longer than the stamens; fruit broad-ellipsoid; seeds numerous.

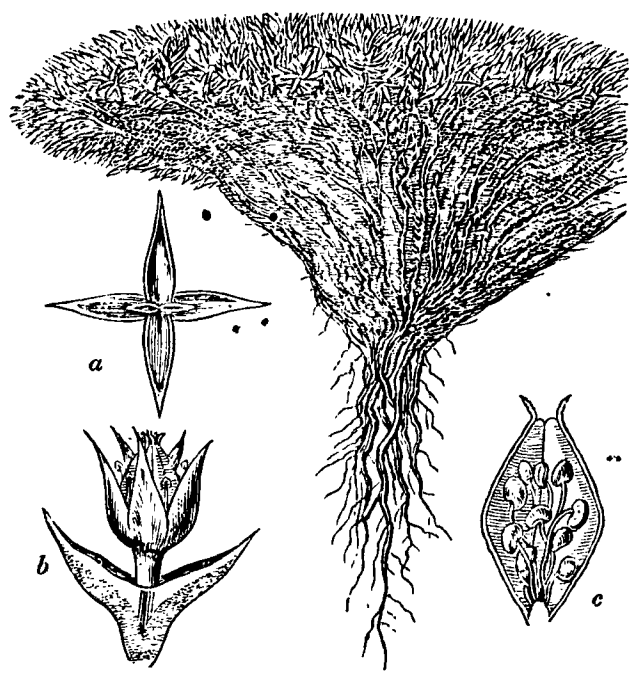


FIG. 31.—*a*, leaves seen from above, to show their position, opposite in pairs; *b*, side-view of flower; *c*, longitudinal section of fruit; all magnified.

On the icy summits of the Australian Alps.

Extends to the Alps of New Zealand and South America.

Name in honor of George Bentham, of London, nephew of the philosopher Jeremiah Bentham, and one of the most extensive phytographical writers of this century, also on Australian plants.

SCLERANTHUS.

Linné, genera plantarum 130 (1737).

Represented in most of the extratropic latitudes of the eastern hemisphere.

Name in reference to the comparatively hard consistence of the calyx, which indurates around the fruit.

SPECIES:

Scleranthus pungens.

R. Brown, prodromus floræ Novæ Hollandiæ 412 (1810).

Perennial, ascending; leaves broadly trigonous- or linear-subulate, pointed; flowers in sessile clusters; calyx comparatively large, deeply 5-cleft or exceptionally 4-cleft, its lobes membranous, spreading, orbicular- or lanceolar-oval, often acuminate; fertile stamens extending to the end of the calyx-lobes or beyond them; sterile stamens 5, linear-setaceous.

On ridges and plains of the north-western desert.

Extends to South Australia and New South Wales.

Scleranthus diander.

R. Brown, as above quoted.

Perennial, erect or ascendant; leaves trigonous-subulate, pointed; flowers in sessile clusters; lobes of the calyx 5, as long as the tube or longer, acute; fertile stamens 2, much shorter than the calyx-lobes.

On subalpine meadows.

Extends to Tasmania and New South Wales.

Species-name expressive of the reduction of the stamens to two.

Scleranthus biflorus.

J. Hooker, flora Novæ Zelandiæ i. 74 (1853).

Perennial, densely tufted and often widely spreading; leaves linear-subulate; stalks solitary, short or elongated, bearing at the summit a pair of flowers and four semilanceolar bracteoles; lobes of the calyx normally 4, exceptionally 3 or 5, all convergent or erect, shorter than the tube; fertile stamen 1, about half as long as the calyx-lobes; sterile stamens none.

Abundant in the alpine and subalpine regions, descending hardly to 3,000 feet; at the Genoa as low as 2,000 feet; rare on Mount Warrenheip and in its vicinity.

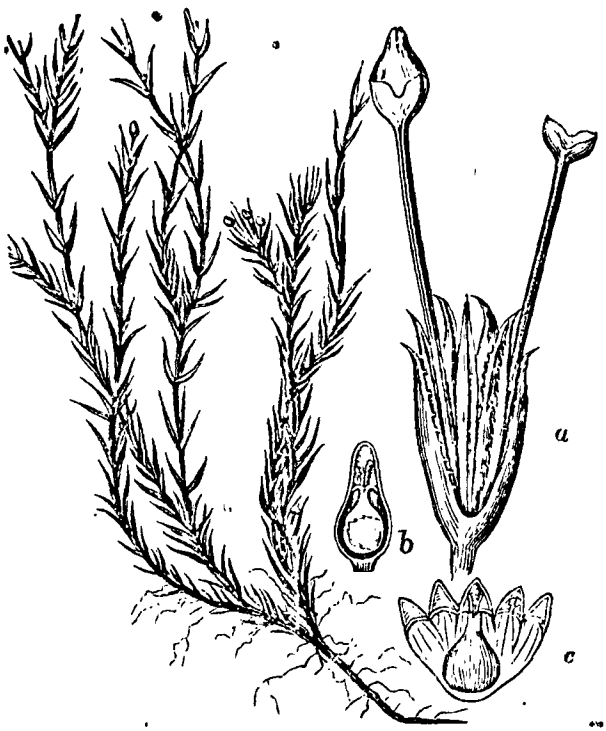
Extends to New South Wales, Tasmania and New Zealand.

Scleranthus mniaroides.

F. v. Mueller, Plants indigenous to Victoria i. 215 (1862).

Perennial, tufted; leaves linear-subulate; stalks solitary, elongated, bearing a single flower and two rhomboid-roundish confluent bracteoles; lobes of the calyx 5, convergent or erect, shorter than the tube; fertile stamen 1, about half as long as the calyx-lobes; sterile stamens none.

In the glacier-regions of the Australian Alps, not descending to an elevation of less than 5,000 feet.



Extends to New South Wales.

Species-name derived from Mniarum, the generic appellation given to the preceding species by Doctors R. and G. Forster during Cook's second voyage, who wished to designate the mossy appearance of the often cushion-like expansions of that plant.

FIG. 32.—*a*, upper leaves, flowerstalks with bracteoles and one flower; *b*, longitudinal section of a flower; *c*, the same, drawn asunder; all magnified.

SALSOLACEÆ.

Linné, classes plantarum 507 (1738).

GENERA:

Atriplex: Calyx of the staminate flower 5-lobed, rarely 4- or 3-lobed. Stamens 5 or less. Calyx of the pistillate flower 2-lobed, enlarged in age. Fruit enclosed. Seed vertical, rarely horizontal. Embryo peripheric.—Herbs or shrubs; leaves scattered, flat; flowers in clusters, spikes or panicles; fruit-calyx dry, rarely somewhat succulent.

Rhagodia: Calyx 5-lobed, almost unchanged in age. Stamens 5 or less. Styles 2, rarely 3. Fruit depressed-globular, berry-like. Seed horizontal. Embryo peripheric.—Shrubs, rarely herbs; leaves flat; flowers partly or nearly all unisexual; fruit calyx never enlarged; stalks many-flowered.

Chenopodium: Calyx 5-lobed, rarely 4- or 3-lobed, almost unchanged in age. Stamens 5 or less. Styles 2, rarely 3. Fruit outside membranous, not succulent. Seed horizontal, less frequently vertical. Embryo peripheric.—Herbs, rarely shrubs; leaves scattered, flat; flowers all or mostly bisexual; fruit-calyx rarely berry-like enlarged; stalks many-flowered.

Dysphania: Calyx 3-lobed or consisting of a single sepal. Stamens 3–1. Styles 2 or 1. Fruit outside membranous. Seed vertical. Embryo peripheric.—Herbs; leaves small, scattered, flat; flowers extremely minute, in clusters, partly unisexual; lobes of calyx transparent, upwards dilated and concave.

Enchylæna: Calyx 5-lobed, enlarged and very succulent in age, without appendages. Stamens 5 or less. Styles 2 or 3. Fruit depressed, globular, quite enclosed. Seed horizontal. Embryo peripheric.—Herbs or shrubs; leaves scattered, narrow, not flat; flowers all bisexual, axillary, solitary, sessile.

Threlkeldia: Calyx 5- rarely 4-lobed, in age indurated and outside succulent, without appendages. Stamens 3. Styles 2 or 3. Fruit quite enclosed. Seed vertical. Embryo peripheric.—Half-shrub; leaves scattered, narrow; flowers sessile, axillary, solitary, bisexual.

Chenolea: Calyx 5- rarely 4-lobed, in age usually indurated and also mostly enlarged into 5 or less spine-like appendages. Stamens 5, rarely less. Styles 2 or 3. Fruit quite enclosed. Seed horizontal or diagonal or vertical. Embryo peripheric.—Herbs or oftener shrubs; leaves scattered, narrow; flowers sessile, axillary, solitary, or rarely 2 or more together and connate, mostly bisexual.

Kochia: Calyx 5- rarely 4-lobed, in age enlarged into 5 free or connate broad scarious horizontal appendages. Stamens 5, rarely less. Styles 2 or 3. Fruit depressed-globular, quite enclosed. Seed horizontal. Embryo peripheric.—Herbs or oftener shrubs; leaves scattered, rarely opposite, always narrow, seldom flat; flowers sessile, axillary, solitary or occasionally two together, partly unisexual.

Salsola: Calyx 5- rarely 4-lobed, in age enlarged into as many free scarious horizontal broad appendages. Stamens 5, rarely less. Styles 2, seldom 3. Fruit depressed-globular, quite enclosed. Embryo coiled into a conical or doubly convex spire. Albumen absent.—Herbs or half-shrubs; leaves narrow, mostly scattered; flowers sessile, axillary, often solitary and bisexual.

Suæda: Calyx 5-lobed, without appendages. Stamens 5. Styles 2–3, rarely 4–5. Fruit membranous outside. Seed horizontal or vertical. Embryo coiled into a flat spire. Albumen absent or very scanty.

—Herbs or half-shrubs; leaves scattered, narrow; flowers sessile, axillary, either solitary or 2 or more together, mostly bisexual.

Salicornia: Calyx 2–5-lobed or lobeless, neither indurated nor appendiculate. Stamens 1–2. Styles 2, rarely 3. Fruit concealed within the joints of the spike. Seed vertical or diagonal. Embryo peripheric.—Carnulent herbs or shrubs, leafless or with opposite rudimentary leaves; stems and branches articulated; flowers 3–7 together at each excavation or bract of the spike, uni- and bisexual.

ATRIPLEX.

Tournefort, institutiones rei herbariæ 506, t. 286 (1700).

Represented in most countries of both hemispheres.

Name first occurring in the writings of Columella and Plinius, there applied to A. hortensis (the English Garden-Orache) and seemingly changed from Theophrastos and Dioscorides' Anthraphaxis, the Greek name for the same plant.

SPECIES:

Atriplex crystallinum.

J. Hooker, in London Journal of Botany vi. 279 (1847).

Annual, procumbent, very succulent, densely beset with papillar glands; leaves oblong or oval or somewhat rhomboidal, entire or bluntly toothed, not large; male flowers few or several in the upper axils; female flowers solitary or two together in the lower axis; lobes of the fruit-calyx shorter than the turgid tube, crenulated, opposite to the edge of the seed.

On coast-sands, especially down to near the tidemarks, at Port Fairy, near Warrnambool, at Port Phillip, Western Port, Gippsland.

Extends to Tasmania and New Zealand.

Atriplex paludosum.

R. Brown, prodromus floræ Novæ Hollandiæ 406 (1810).

Shrubby, procumbent or ascendant, scaly- and glistening-grey; leaves thick, oblong or lanceolar, entire; flowers of each sex on separate plants, the clusters of both in panicles or the female clusters in spikes or some axillary; fruit-calyx almost flat, on a stalklet, its segments from triangular to cordate or almost kidneyshaped.

On muddy or sandy sea-shores.

Extends to Tasmania, South- and West-Australia.

Species-name from the predilection of this species to grow in swampy ground.

Atriplex cinereum.

Poiret, encyclopédie méthodique ix. 471 (1810).

Shrubby, ascendant or erect, scaly- and glistening-grey; leaves thick, lanceolar, oblong or oval, entire; flowers of each sex mostly on

separate plants; the male clusters in simple or branched dense terminal spikes; the female clusters axillary; fruit-calyx rather flat; its segments from triangular to rhomboidal.

Along the sea-coast on sand and rocks abundant.

Extends around the whole extratropic coast of Australia and to New Zealand.

Species-name from the grey though hardly ashy-color of the whole plant.

Atriplex halimoides.

Lindley, in Mitchell's Three Expeditions into the Interior of Eastern Australia' i. 282 (1838).

Almost shrubby, ascendant or erect, scaly-grey; leaves from lanceolar and oval to rhomboidal, mostly toothless; flowers of both sexes on the same plant, in axillary clusters, mixed or solely females in the lower clusters or some solitary; fruit-calyx large, spongy, turbinate or almost hemispheric, its summit depressed and acutely margined or appendiculate, the lobes reduced to minute teeth, the orifice almost closed.

In the desert on the Murray-River and Wimmera.

Extends widely through the saline desert-regions of Australia.

Atriplex spongiosum.

F. v. Mueller, in the Transactions of the Victorian Institute ii. 74 (1857).

Almost shrubby, ascendant or erect, powdery-grey; leaves small, from lanceolar and oval to orbicular or rhomboidal, often wavy-toothed; flowers of both sexes on the same plant, in axillary clusters or the females solitary; fruit-calyx small, spongy, nearly globular, or approaching to an oval form, the lobes reduced to minute teeth, the orifice almost closed.

In the saltbush-country on the Murray-River.

Extends thence widely but sparsely through the desert-regions of South- Central- and West-Australia.

Atriplex Muelleri.

Bentham, flora Australiensis v. 175 (1870).

Herbaceous, perennial, powdery and somewhat scaly-grey; leaves from rhomboidal to almost wedgeshaped or verging into an oval form, grossly toothed; flowers of both sexes on the same plant, in axillary clusters, mixed, but female flowers only in the lower clusters; fruit-calyx not large, rhomboidal, sessile; its tube turgid, slightly longer than the toothed lobes.

On the lagoons at the Murray-River and its lower tributaries.

Extends to South Australia, New South Wales and Queensland.

Atriplex nummularium.

Lindley, in Mitchell's Tropical Australia 64 (1848).

Shrubby, erect, scaly-grey; leaves large, roundish or rhomboidal, rarely halberdshaped, entire or toothed; flowers of each sex nearly all on separate plants; the clusters in dense paniculate terminal spikes, some of the female flowers in axillary clusters; fruit-calyx somewhat turgid; its segments from triangular-oval to roundish or cordate.

In the desert-country on the Murray-River.

Extends to South Australia, New South Wales and Queensland.

Atriplex vesicarium.

Heward, in Bentham's flora Australiensis v. 172 (1870).

Shrubby, erect, scaly-grey; leaves from oblong and lanceolar to roundish-oval, entire; clusters of male flowers in terminal spikes, of female flowers axillary; fruit-calyx membranous; its segments roundish, each almost doubled by a large inflated dorsal appendage.

In the desert on the Murray-River.

Extends to South Australia, New South Wales and Queensland.

Atriplex semibaccatum.

R. Brown, prodromus floræ Novæ Hollandiæ 406 (1810).

Herbaceous, perennial, procumbent or ascendant, almost glabrous or somewhat powdery-scaly; leaves oblong or somewhat lanceolar or wedgeshaped or verging into an oval form, usually toothed; flowers of both sexes on the same plant; male clusters in the upper axils accompanied by a few female flowers; sole female clusters in the lower axils; fruit-calyx rhomboidal, 3-nerved; its lower half entire, succulent and red; its lobes flat.

Not unfrequent in many localities, but preferring somewhat saline ground.

Extends widely through extratropic continental Australia.

Atriplex prostratum.

R. Brown, prodromus floræ Novæ Hollandiæ 406 (1810).

Herbaceous, perennial, procumbent, scaly grey-downy; leaves small, from lanceolar and oblong to oval and rhomboidal, entire or toothed; flowers of both sexes on the same plant, mostly in axillary clusters, mixed, or females only in the lower clusters or these solitary; fruit-calyx very small, rhomboidal or somewhat oval, whitish short-downy, slightly compressed; its lobes shorter than the tube or hardly as long.

In the Murray-desert.

Extends to South Australia, New South Wales and Queensland.

Atriplex angulatum.

Bentham, flora Australiensis v. 175 (1870).

Half-shrubby; scaly- or almost powdery-grey; leaves from rhomboidal to nearly oval or orbicular, rather large, upwards imperfectly toothed; flowers of both sexes on the same plant, mostly in axillary clusters, mixed, but female flowers only in the lower clusters; fruit-calyx of considerable size, narrowed into a stalklet, the lobes much dilated beyond the tube, toothed in front.

On saline plains and around lagoons at and near the Murray-River.

Extends to South Australia and New South Wales.

Atriplex leptocarpum.

F. v. Mueller, in the Transactions of the Philosophic Society of Victoria ii. 74 (1857).

Herbaceous, perennial, procumbent or ascendant, scaly grey-downy; leaves from oblong and oval to rhomboidal or almost wedgeshaped, unequally toothed or nearly entire; flowers of both sexes on the same plant, in axillary clusters or short spikes, mixed or solely females in the lower clusters; fruit-calyx oblong-tubular, veined, open only on the oblique-truncate or acute apex.

In the desert on the Murray-River.

Extends to South Australia, New South Wales and Queensland.

RHAGODIA.

R. Brown, prodromus floræ Novæ Hollandiæ 408 (1810).

Represented in extratropic and subtropic Australia.

Name in allusion to the copious berry-like fruits.

Rhagodia Billardierii.

R. Brown, as above noted.

Shrubby, erect; branchlets robust; leaves thick, mostly scattered, rather large, lanceolar- or narrow-oblong, less frequently linear, oval or halberdshaped, often blunt, underneath powdery-grey, flat or recurved at the margin, on short stalks; panicle terminal; fruit red.

Along the sea-shores common, also in saline places of the desert-country at and towards the Murray-River.

Extends widely through extratropic Australia.

Rhagodia spinescens.

R. Brown, as noted.

Shrubby, erect; branchlets stiff, frequently ending in thorns; leaves scattered or some opposite, oval, roundish or triangular, not large, flat or concave, often powdery-grey; flowers in short spikes or panicles, occasionally solitary; fruit violet, red or yellow.

In the desert at and towards the Murray-River frequent.

Extends through most of the desert-regions of Australia.

Rhagodia nutans.

R. Brown, as noted.

Herbaceous, prostrate or somewhat climbing; branchlets weak; leaves opposite or some scattered, on slender stalks, flat, from halberdshaped to almost lanceolar or even linear, acute, neither large nor very succulent; flowers in short spikes or panicles or clusters, usually with 2 or 3 stamens; fruit bright-yellow or red.

In most parts of the colony, with a predilection for saline localities, but, like the preceding species, absent from the Alps.

Species-name from the drooping branches, which depend from the often ascendant stems.

Extends through a vast portion of South-Eastern Australia.

CHENOPODIUM.

Tournefort, institutiones rei herbariæ 506, t. 288 (1700).

Represented in all zones, but particularly in the temperate.

Name from the Greek, the leaves of some species being in shape not unlike a goosefoot; hence also the vernacular name.

SPECIES:

Chenopodium nitrariaceum.

F. v. Mueller, in Bentham's flora Australiensis v. 158 (1870).

Shrubby, powdery-grey; branches very spreading; branchlets often thorn-like-pointed; leaves divergent, spatular- or oblong-linear, entire; branches of the panicle rigid or hardly developed; plurality of flowers unisexual; stamens 5; fruit compressed; seed vertical, black, smooth, shining; embryo horseshoe-shaped.

In the saltbush-country on the Murray-River, Wimmera and Avoca.

Extends to most of the deserts of Australia.

Species-name from the resemblance to a Nitraria.

Chenopodium auricomum.

Lindley, in Mitchell's Tropical Australia 94 (1848).

Tall, perennial, erect, powdery-grey; leaves large, from oblong and oval to halberdshaped, not toothed; flower-clusters in ample panicles or crowded into dense spikes; stamens 5; fruit round, depressed; seed horizontal.

On the Murray-River, towards its junction with the Darling-River.

Extends through much of the eastern central and northern desert-interior of Australia.

Species-name from the conspicuous flower-clusters, sometimes in head-like masses, and when in flower golden-yellow from the anthers.

Chenopodium microphyllum.

F. v. Mueller, in the Transactions of the Philosophic Institute of Victoria ii. 74 (1857).

Dwarf, perennial, powdery-grey; leaves minute, from lanceolar and ovate to rhomboidal; clusters few-flowered, hardly forming spikes; stamens 4 or fewer; fruit round, depressed; seed horizontal, not shining.

On dry or slaty plains and ridges at Bacchus-Marsh, Richardson's River, the Wimmera and Murray-River.

Extends to New South Wales and South Australia.

Chenopodium carinatum.

R. Brown, prodromus floræ Novæ Hollandiæ 407 (1810).

Annual, procumbent or ascendant, beset with short glandular hair; leaves almost oblong or oval, rarely roundish or rhomboidal, always wavy-toothed or lobed, not large nor grey; flowers very small, mostly in axillary clusters; segments of the calyx bluntly keeled; stamens usually 1; fruit oval, compressed; seeds vertical.

On light soil in many places.

Extends widely through extratropic Australia, also New Zealand and New Caledonia.

Species-name in allusion to the keeled sepals.

Chenopodium cristatum.

F. v. Mueller, fragmenta phytographiæ Australiæ vii. 11 (1869).

Annual, procumbent or ascendant, beset with short glandular hair; leaves almost oblong or oval or rhomboidal, wavy-toothed or lobed, not large nor grey; flowers in axillary clusters; segments of the calyx acute, fringed-membranous along their keel; stamens usually 1; fruit oval, compressed; seed vertical, smooth, shining.

On the Murray-River.

Extends to New South Wales, Queensland, South- and West-Australia.

Species-name in allusion to the crested sepals.

Chenopodium atriplicinum.

F. v. Mueller, fragmenta phytographiæ Australiæ vii. 11 (1869).

Procumbent or ascendant, beset with evanescent papillar glands; leaves from narrow-lanceolar to rhomboidal and halberdshaped, without teeth, not grey; flowers in axillary clusters; segments of the calyx acute, at the base gibbous; stamen 1; styles very short; fruit compressed, papillar-rough; seed vertical, adherent.

On the Wimmera and Murray-River.

Extends to New South Wales and South Australia.

DYSPHANIA.

R. Brown, prodromus floræ Novæ Hollandiæ 411 (1810).

Represented in continental Australia only.

Name derived from the Greek, indicative of the individual flowers, so small as to be hardly visible.

SPECIES:

Dysphania myriocephala.

Bentham, flora Australiensis v. 165 (1870).

Leaves small, oblong or lanceolar; clusters of flowers axillary, separated from each other; calyx consisting of one sepal, deciduous; stamens 1–2; styles 2; fruit oval, extremely minute.

On the sandy and periodically inundated banks of the Murray-River.

Extends to New South Wales, South- and West-Australia.

ENCHYLÆNA.

R. Brown, prodromus floræ Novæ Hollandiæ 408 (1810).

Represented in continental Australia only.

Name from the succulent calyx, as giving the fruit a berry-like aspect.

SPECIES:

Enchylæna tomentosa.

R. Brown, as noted.

Procumbent or ascendant, almost shrubby, densely short-downy, rarely almost glabrous; leaves cylindrical-linear; flowers with minute bracts; calyx in age berry-like, red or yellow, concealing the fruit.

As well on the sea-shores as in the desert.

Extends over saline ground through nearly the whole Australian continent, but as yet neither found in Tasmania nor New Zealand.

THRELKELDIA.

R. Brown, prodromus floræ Novæ Hollandiæ 409 (1810).

Represented in extratropic Australia only.

Name in memory of Caleb Threlkeld, M.D., who in 1727 published a list of Irish plants, chiefly from the observations of Dr. Th. Molyneux.

SPECIES:

Threlkeldia diffusa.

R. Brown, as noted.

Procumbent or ascendant, glabrous; leaves succulent, linear-cylindrical, acute, often glaucous; calyx small, tubular, with erect lobes; styles 2 or 3, to above the middle connate; fruit-calyx somewhat baccate, dark-violet, almost oval.

Along nearly the whole of our coast.

Extends to Tasmania, South- and West-Australia.

CHENOLEA.

Thunberg, nova genera plantarum i. 9 (1781).

Represented in many countries of the eastern hemisphere.

Name, because geese prey on the first known plant of this genus from South Africa.

SPECIES:

Chenolea salsuginosa.

F. v. Mueller, fragmenta phytographiæ Australiæ x. 92 (1876).

Glabrous; leaves thick-linear, short, succulent; flowers very small, solitary; styles unusually short; fruit-calyx much indurated, exceedingly small, somewhat globular or pearshaped, oblique or gibbous from an unilateral blunt protuberance; seed almost globular.

On salt-flats at the Murray-River and in its vicinity.

Extends to New South Wales and South Australia.

Species-name from the salty succulent foliage. This plant forms a sub-genus (Osteocarpum, from the bony hardness of the fruit), by which the transit from Chenolea to Threlkeldia is established.

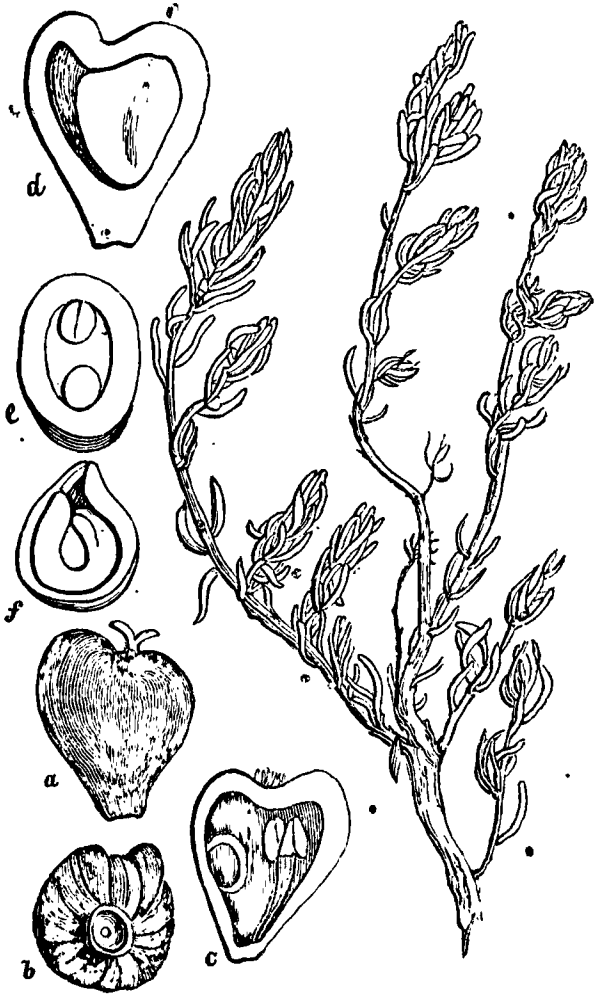


FIG. 33.—*a*, side-view of a fruit; *b*, basal-view of a fruit; *c*, longitudinal section of young fruit; *d*, longitudinal section of ripe fruit; *e*, transverse section of fruit; *f*, longitudinal section of fruit; all magnified.

Chenolea enchylænoides.

F. v. Mueller, fragmenta phytographiæ Australiæ x. 92 (1876).

Dwarf, herbaceous, procumbent or ascendant, often soft-hairy; leaves lanceolar- or oblong-linear, acute; flowers solitary; fruit-calyx neither indurated nor pungent, with 5 broadly dilated inflected thick unequal lobes; seed horizontal.

On dry meadows and ridges at Port Phillip and Bacchus-Marsh.

Extends to New South Wales and South Australia.

Deserves sectional or perhaps generic separation as Heteroclamys (F. v. M. Second General Report 1854, p. 15).

Species-name to indicate the transit to Enchylæna.

Chenolea sclerolænoides.

F. v. Mueller, in Bentham's flora Australiensis v. 192 (1870).

Woolly- or silky-downy, dwarf; leaves linear or narrow-lanceolar; flowers enveloped in a dense woolly covering, solitary; fruit-calyx with 5 membranous erect bifid dorsal appendages, and with 5 almost basal very short spines; seed horizontal.

On sand-land at the Murray-River.

Extends through many of the desert-regions of extratropic Australia.

Species-name from the affinity to the species of the section (formerly genus) Sclerolæna, so called from the indurated fruit-calyx.

Chenolea Dallachyana.

Bentham, flora Australiensis v. 191 (1870).

Woolly-downy; leaves thick-linear; fruit-calyx almost globular, membranous, without appendages and spines; seed horizontal.

In the desert on the Murray-River.

Extends to South Australia and New South Wales.

Name in honor of the discoverer, Mr. John Dallachy, Curator of the Melbourne Botanic Garden.

Chenolea tricornis.

Bentham, as above.

Leaves thick, linear, silky-downy; stamens and styles 3; fruit-calyx woolly-downy, not hardened, with 3 dorsal spreading blunt horn-like appendages, each curved upwards at the end; seed horizontal.

On saline clay-plains at the Murray-River.

Extends to South Australia and New South Wales.

Species-name from the three fruit-horns.

Chenolea biflora.

Sclerolæna biflora; R. Brown, prodromus floræ Novæ Hollandiæ 410 (1810).

Woolly or silky-downy; leaves thick-linear; flowers 2 or 3 rarely 4 or more together in the axils; fruit-calyces connate, diverging from

their common hollow base, much indurated, upwards free and slender, with 1 or 2 dorsal tubercular or spiny minute appendages or often without them; seed horizontal, depressed.

In the sandy desert on the Murray-River.

Extends to South Australia, New South Wales and Queensland.

Chenoleæ paradoxa.

Sclerolæna paradoxa; R. Brown, prodromus floræ Novæ Hollandiæ 410 (1810).

Woolly-downy; leaves from thick-linear to oblong; flowers several or many together in the axils; fruit-calyces connate into a bony globular mass, enveloped in woolly covering, each calyx with 1 or 2 or more dorsal thick and short spines; seed nearly spherical.

In the saline and sandy deserts at and towards the Murray-River.

Extends widely through the desert-country of extratropic Australia.

This abnormal species could be isolated as a genus, for which the original designation Sclerolæna might be retained.

Chenolea diacantha.

Anisacantha diacantha; Nees, in Lehmann's plantæ Preissianæ i. 635 (1845).

Silky-downy; leaves thick-linear; flowers solitary; fruit-calyx much indurated, with 2 opposite divergent spines; seed almost globular.

In somewhat saline places on and towards the Murray-River and Wimmera, extending southward to Bacchus-Marsh.

Extends widely through extratropic and tropic Australia.

Species-name from the two thorny appendages of each calyx.

Chenolea tricuspis.

F. v. Mueller, fragmenta phytographiæ Australiæ x. 92 (1876).

Glabrous or slightly downy; leaves linear-semicylindric, acute; flowers solitary; fruit-calyx indurated, with 3–4 dorsal very unequal acicular spines; seed vertical.

On subsaline and sandy tracks on the Murray-River, particularly on places subject to temporary inundations.

Extends to South Australia, New South Wales and Queensland.

Chenolea echinopsila.

F. v. Mueller, as above.

Glabrous or somewhat hairy; leaves linear-cylindrical; flowers solitary; fruit-calyx indurated, small, with 5 dorsal unequal short spines, one of which often bifid; seed vertical.

In the desert on the Murray-River.

Extends to South Australia, New South Wales and Queensland.

Chenolea quinquecuspis.

F. v. Mueller, fragmenta phytographiæ Australiæ x. 92 (1876).

Glabrous or slightly seldom densely downy; leaves broad- or lanceolar-linear, almost flat, acute; flowers solitary; fruit-calyx indurated, with 4–5 dorsal very unequal acicular spines; seed vertical.

On saline plains at and near the Murray-River.

Extends to South Australia, New South Wales and Queensland.

Species-name from the number and almost acicular pungency of the fruit-appendages.

KOCHIA.

Roth, in Schrader's Journal fuer die Botanik i. 303 (1799).

Represented in many countries of the eastern hemisphere.

Name in honor of Dr. W. D. J. Koch, one of the most meritorious writers on German plants.

SPECIES:

Kochia oppositifolia.

F. v. Mueller, in the Transactions of the Victorian Institute i. 134 (1855).

Shrubby, almost silky-downy; leaves opposite or some scattered, all very short, triangular, thick, acute, somewhat keeled; horizontal appendages of the fruit-calyx orbicular or almost fanshaped, glabrous, disjointed.

On saline ground at the Murray-River and in its vicinity.

Extends to South- and West-Australia.

Kochia brevifolia.

R. Brown, prodromus floræ Novæ Hollandiæ 409 (1810).

Shrubby; branches densely downy; leaves all scattered, very short, thick-linear or oblong, turgid, blunt; fruit-calyx depressed; its horizontal appendages fanshaped, disunited, glabrous, equal, not large.

In saline depressions at and towards the Murray-River, rarer on the coast.

Extends widely through extratropic Australia.

Kochia pyramidata.

Bentham, flora Australiensis v. 186 (1870).

Shrubby, almost velvet-downy; leaves short, thick-linear or cylindrical, often clustered; fruit-calyx horizontally surrounded by an annular membrane, conically contracted from above the membrane to the summit.

In the saline parts of the desert at and near the Murray-River.

Extends to New South Wales and South Australia.

Species-name from the conspicuous protraction of the calyx above the perfectly concrete appendages.

Kochia villosa.

Lindley, in Mitchell's Tropical Australia 91 (1848).

Shrubby, variously downy; leaves from linear-cylindrical to club-shaped or largely obliterated; horizontal appendages of the fruit-calyx connate into a broad membrane.

In the saltbush-country and also in the limestone-formation at and towards the Murray-River.

Kochia villosa.—(FIG. 34A).

A variety (sedifolia) has short thick blunt velvet-downy leaves; a second (aphylla) has pungent branchlets and minute distant or undeveloped leaves.

Extends through the whole desert-interior of Australia, approaching on arid saline country the coasts.

Species-name, because the plant is often beset with soft hair.

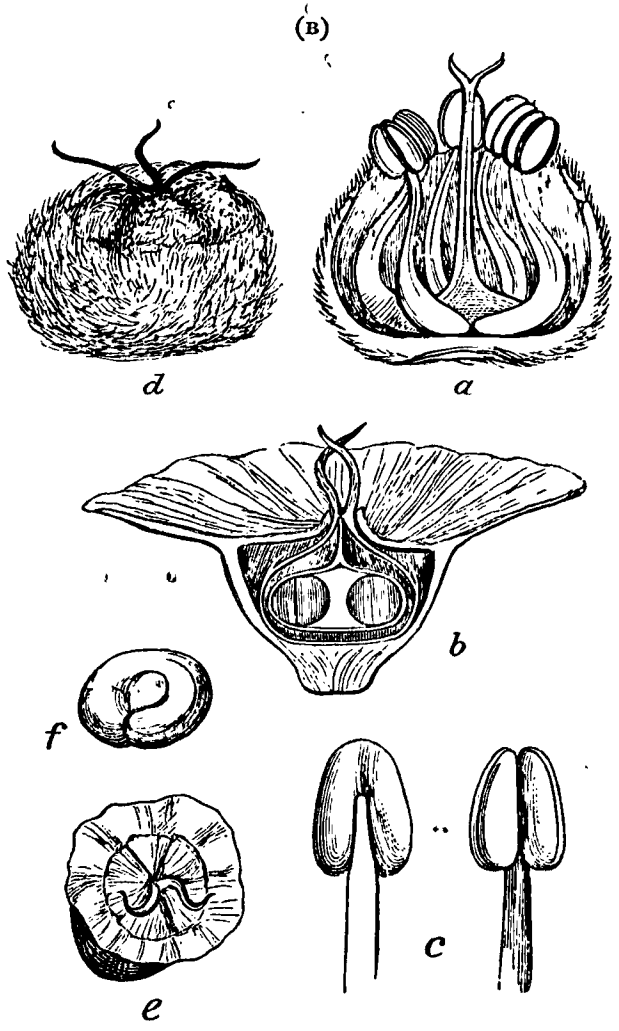


FIG. 34 (B).—*a*, longitudinal section of flower; *b*, longitudinal section of fruit; *c*, back- and front-view of anther; *d*, flower entire; *e*, fruit seen from above; *f*, embryo; all but variously magnified.

Kochia triptera.

Bentham, flora Australiensis v. 185 (1870).

Shrubby, usually glabrous; leaves linear-cylindrical, acute; tube of the fruit-calyx turbinate, with 3 rarely 4 longitudinally decurrent membranous expansions, the horizontal appendages quite connate into a broad membrane.

On the Murray-River in the saltbush-country.

Extends to New South Wales and South Australia.

Species-name from the narrow membranes, usually three in number, which descend from the horizontal expansion.

Kochia lanosa.

Lindley, in Mitchell's Tropical Australia 88 (1848).

Shrubby, silky- or woolly-downy; leaves thick-linear, acute; fruit-calyx with 5 imperfectly connate horizontal downy appendages and with 5 linear acute terminal lobes.

In sand- and salt-land on the Murray-River.

Extends widely through the deserts of extratropical Australia.

Species-name from the somewhat woolly covering of the whole plant.

Kochia ciliata.

F. v. Mueller, Report on the Plants of Babbage's Expedition, p. 20 (1858).

Shrubby, silky- or woolly-downy; leaves lanceolar-linear, almost flat; fruit-calyx much depressed, its horizontal annular expansion undivided, densely fringed with soft hairs.

In the sandy desert at the Murray-River.

Extends to New South Wales and South Australia.

Kochia humillima.

F. v. Mueller, fragmenta phytographiæ Australiæ ix. 168 (1875).

Herbaceous, perennial, procumbent, soft- or silky-downy; leaves lanceolar-linear, almost flat; fruit-calyx surrounded by a very narrow ring-like undivided horizontal expansion.

On meadows at the Campaspe and Murray-River.

Extends to New South Wales.

Species-name from the habit of the plant, humbler than that of any congener.

Kochia brachyptera.

F. v. Mueller, Second General Report, p. 15 (1854).

Half-shrubby, procumbent, long- and soft-hairy; leaves linear, almost flat; fruit-calyx small, longitudinally 5-ribbed from below the narrow horizontal undivided expansion.

In the sandy desert on the Murray-River.

Extends to South Australia and New South Wales.

Species-name from the membrane, narrower than in most species.

Kochia stelligera.

F. v. Mueller, fragmenta phytographiæ Australiæ vii. 13 (1869).

Half-shrubby, procumbent, woolly- or velvet-downy; leaves linear, somewhat turgid; fruit-calyx small, its tube hemispheric, its narrow horizontal expansion radiating into usually 10 or 12 acute teeth.

In the desert on the Murray-River.

Extends to New South Wales and South Australia.

Species-name from the star-like terminal expansion of the fruit-calyx.

SALSOLA.

Linné, genera plantarum 67 (1737).

Represented in the extratropic regions of the eastern hemisphere, more frequent in Asia, rare in Australia, and rare also anywhere within the tropics and in America.

Name adopted from Cæsalpini and suggested by the salty nature of these plants.

SPECIES:

Salsola Kali.

Linné, species plantarum 222 (1753).

Rigid, slightly or not woody; branches spreading; leaves cylindrical or half-flattened, pungent, divergent, the floral leaves gradually abbreviated to bracts; appendages of the fruit-calyx from oval to kidney-shaped, scarious, streaked; cotyledons separated.

On the sea-shores and in the desert-country, as well on sandy as saline ground.

Extends to most maritime countries of the globe; hence through much of Australia, verging also far inland.

SUÆDA.

Forsk-al; flora Ægyptico-Arabica 69 (1775).

Represented in most countries of the eastern hemisphere, rare in America.

Name of Arabic origin.

SPECIES:

Suæda maritima.

Dumortier, flora Belgica 22 (1827).

Glabrous; herbaceous or somewhat woody; leaves linear-cylindrical, succulent; flowers very small, oftener clustered than solitary; bract and bracteoles minute, scale-like; calyx-lobes turgid, closing over the fruit; styles usually 2; seed depressed, rarely almost erect.

Along our whole coast, particularly in saline wet muddy soil, occurring likewise in the desert.

Extends around the whole of extratropic Australia, so also along most extratropic and extraarctic coast-tracts of both hemispheres, occasionally also inland.

SALICORNIA.

Tournefort, corollarium institutionum rei herbariæ 51 (1703).

Represented more frequently in the eastern than in the western hemisphere.

Name latinized from a French vernacular of S. herbacea, Linné.

SPECIES:

Salicornia robusta.

F. v. Mueller, fragmenta phytographiæ Australiæ vi. 251 (1868).

Shrubby; branches stout; leaves conspicuously developed, triangular; spikes thick, with acute leaf-like bracts or floral leaves; flowers three at each bract, the lateral flowers without pistil, the middle flower bisexual; calyx distinctly lobed; stamen 1; branches of the style long; seeds with conspicuous albumen.

On the Murray-River, towards its junction with the Darling-River.

Extends to South Australia and New South Wales.

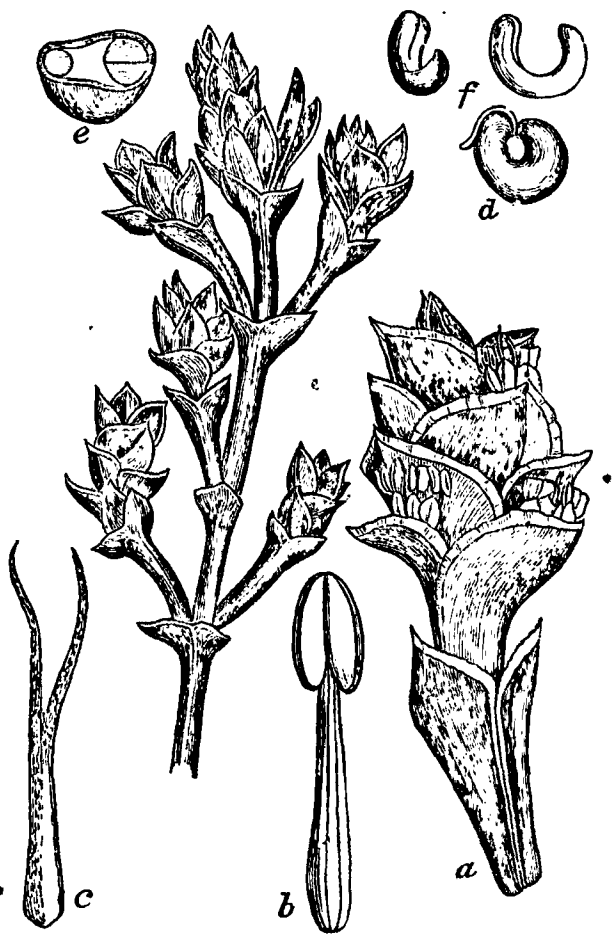


FIG. 35.—*a*, spike; *b*, stamen; *c*, style with stigmas; *d*, seed; *e*, transverse section of a seed; *f*, embryo; all magnified.

Salicornia arbuscula.

R. Brown, prodromus floræ Novæ Hollandiæ 411 (1810).

Shrubby; leaves obliterated; spikes short, with blunt completely connate rudimentary bracts; flowers 3 at each bract, all bisexual; calyx distinctly lobed; stamen 1; fruit mostly formed by the middle flower.

Along the sea-coast on salty mud to within tidal influence, and on saline depressions inland.

Extends widely through extratropic Australia.

Species-name from the aspect of the plant, tree-like in miniature.

Salicornia australis.

Solander, in G. Forster's florulæ insularum australium prodromus 88 (1786).

Herbaceous, ascendant, perennial; leaves obliterated; spikes elongated, with blunt completely connate rudimentary bracts; flowers 5–7 at each bract, all bisexual; calyx almost lobeless; stamens 2; fruit of the exterior flowers mostly imperfect.

On saline wet coast-land to within tidal influence, also on moist saline ground inland.

Extends widely through extratropic Australia.

AMARANTACEÆ.

A. L. de Jussieu, genera plantarum 87 (1789).

Name from the typical genus Amarantus of C. Bauhin and de l'Obel, expressive of the never fading flowers.

GENERA:

Alternanthera: Sepals 5. Stamens 5, connate at the base, with or without minute intervening sterile stamens. Anthers 1-celled, all 5 or a lesser number developed. Stigmas 2, free or united. Ovary with 1 ovule. Fruit indehiscent. Seed vertical.—Herbs or seldom half-shrubs; leaves opposite; flowers small, in clusters, each with 2 bracteoles and 1 bract; sepals short.

Euxolus: Sepals 3, 4 or 5, very rarely 2 or 1. Stamens 3–5, free. Sterile stamens none. Anthers 2-celled. Stigmas 2–3, capillary. Ovary with 1 ovule. Fruit indehiscent. Seed vertical.—Herbs; leaves scattered; flowers in clusters or simple or paniculate spikes, partly unisexual, each with 2 bracteoles and 1 bract; sepals short.

Polycnemum: Sepals 5, equal. Stamens 1–5, connate at the base. Sterile stamens none. Anthers 2-celled. Stigmas 2, capillary. Ovary with 1 ovule. Fruit indehiscent. Seed vertical.—Herbs or half-shrubs; leaves scattered; flowers small, solitary, each with 2 persistent bracteoles; sepals short.

Ptilotus: Sepals 5. Stamens 5, connate at the base, partially or rarely all fertile. Anthers 2-celled. Style elongated. Stigma undivided. Ovary with 1 ovule. Fruit indehiscent. Seed vertical.—Herbs or shrubs; leaves scattered; spikes often shortened to heads or clusters; each flower with 1 persistent bract, and with 2 scarious deciduous bracteoles; sepals often elongated, usually beset with long soft articulated hair.

ALTERNANTHERA.

Forskal, flora Ægyptiaco-Arabica 28 (1775).

Represented in the warmer regions of both the western and eastern hemisphere, extending northward to Spain, southward to New Zealand.

Name, because the fertile stamens alternate usually with antherless filaments.

SPECIES:

Alternanthera triandra.

De la Marck, encyclopédie méthodique i. 95 (1783).

Procumbent; leaves linear or narrow-lanceolar; sepals glabrous, as well as the bract and bracteoles terminating into a narrow acumen; three or two only of the stamens bearing anthers; intervening sterile stamens none.

Widely distributed through the colonial territory, with a preference for valleys and river-banks and for temporarily inundated places.

Extends over all Australia, widely over Africa, also the warmer parts of Asia and America, reaching its most southern limits in Tasmania and New Zealand.

EUXOLUS.

Rafinesque-Schmaltz, flora telluriana 42 (1838).

Represented in most of the warmer regions of the globe, rare in the cooler parts of Europe, Asia and North America.

Name explanative of the well closed fruit, in contrast to the transversely dehiscent fruit of the closely allied genus Amarantus, holding in this respect the same position as Claytonia or Calandrinia to Portulaca.

SPECIES:

Euxolus macrocarpus.

Amarantus macrocarpus; Bentham, flora Australiensis v. 216 (1870).

Dwarf, annual; leaves small, obovate, oblong or roundish, sometimes slightly bilobed at the summit, prominently ribbed, all conspicuously stalked; flower-clusters axillary; sepals 3 or 5, very narrow, pointed; fruit oval, upwards much attenuated, about half exserted; pericarp free, reticular-wrinkled, much ampler than the seed.

On the Murray-River, near its junction with the Darling-River.

Extends to New South Wales and Queensland.

POLYCNEMUM.

Linné, genera plantarum editio secunda 21 (1742).

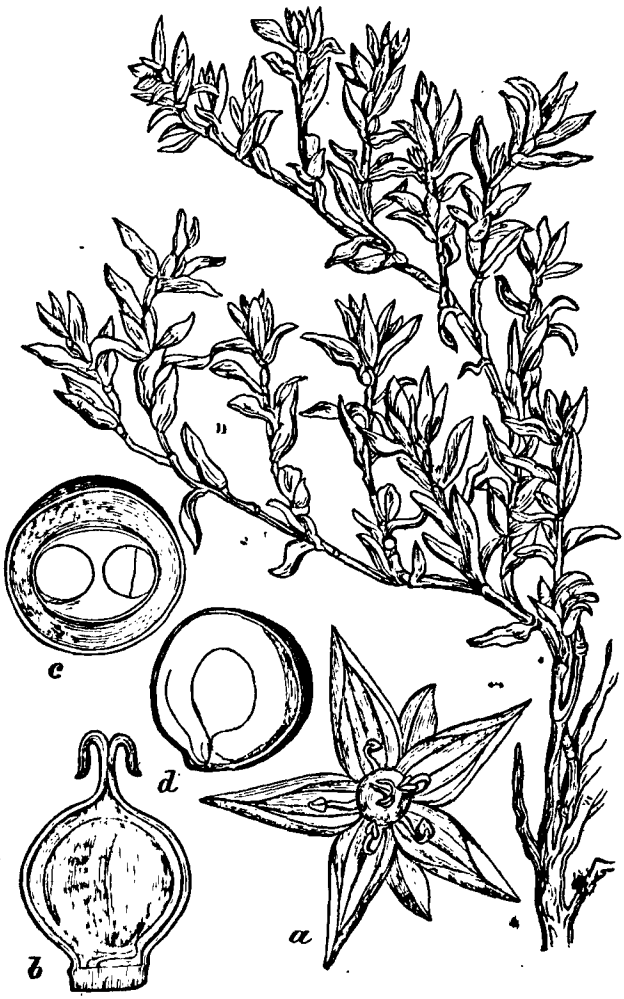
Represented in Middle and Southern Europe, Northern Africa, South-Western Asia, subtropical and extratropical Australia and perhaps also in America.

Name derived from the numerous joints of the typical European species, but applied by Dioscorides originally to the modern Zizyphora among Labiatæ.

SPECIES:

Polycnemum pentandrum.

Hemichroa pentandra; R. Brown, prodromus floræ Novæ Hollandiæ 409 (1810).



Herbaceous, perennial, procumbent, glabrous; leaves semicylindric, acute, succulent; flowers not very small; sepals somewhat carnulent, acute, inside pink or white; stamens 5, less than half as long as the sepals; stigmas elongated.

On wet saline meadows dispersed along the coast-tracts.

Extends to Tasmania, New South Wales, South- and West-Australia.

FIG. 36.—*a*, flower, seen from above; *b*, longitudinal section of pistil; *c*, transverse section of fruit; *d*, longitudinal section of seed; all magnified.

Polycnemum diandrum.

Hemichroa diandra; R. Brown, as above.

Half-shrubby, ascending, glabrous; leaves semicylindric, carnulent; flowers not very small; sepals somewhat scarious, almost obtuse; stamens 2, more than half as long as the sepals; stigmas short.

In saline desert-tracts near the Murray-River.

Extends to New South Wales, South- and West-Australia.

PTILOTUS.

R. Brown, prodromus floræ Novæ Hollandiæ 415 (1810).

Represented all over Australia, but not beyond, as far as hitherto known.

Name derived originally from the plumous downs, into which the fruit is imbedded or from the fugitive calyx; this etymologic meaning might be extended (after the genus Trichinium became added) as pointing to the long soft vestiture, by which many Trichinia are almost feathered.

SPECIES:

Ptilotus spatulatus.

Poiret, encyclopédie méthodique iv. 620 (1817).

Stems herbaceous, procumbent, ascendant, rather short, as well as the leaves glabrous or slightly downy; radical leaves ovate-spatulate, on long stalks; stem leaves gradually lanceolar; spike very dense, usually supported by floral leaves, not much elongated; bract nearly half as long as the calyx, very acute, outside brownish and downy; sepals pale green-yellowish or at the summit slightly red, all at the base inside unbearded.

On sandy as well as loamy pasture-land not rare.

Extends to New South Wales, Tasmania, South- and West-Australia.

Ptilotus erubescens.

Schlechtendal, Linnæa xx. 575 (1847).

Stems almost herbaceous, erect or ascendant, rather short, as well as the leaves glabrous or slightly downy; leaves all very narrow; spike head-like; bracts much shorter than the calyx, acute, outside pale-brownish and downy; sepals curved upwards, red at the summit, inner sepals towards the base inside woolly.

From the south-western districts of Victoria to the lower Murray-River and its tributaries on less fertile hills and plains.

Extends to South Australia and New South Wales.

Ptilotus macrocephalus.

Poiret, encyclopédie méthodique iv. 620 (1817).

Stems erect, mostly simple, as well as the leaves glabrous; leaves linear or exceptionally lanceolar, few and chiefly towards the base of the stem; spike dense, abbreviated; bracts totally transparent, with very faint midnerve; sepals very long, pale green-yellowish, all at the base inside unbearded.

Chiefly on basaltic plains and ridges from the Barwon to the western boundaries of the colony, advancing to the Wimmera.

Extends to New South Wales and Queensland.

Ptilotus nobilis.

F. v. Mueller, fragmenta phytographiæ Australiæ vi. 227 (1868).

Stem erect, stout, mostly somewhat branched; lower leaves obovate-oblong, on long stalks; upper leaves narrower and nearly sessile, all of firm consistence, glabrous; bracts acutely pointed, dark-colored at the back; spike dense, often elongated; sepals very long, pale green-yellowish, all at the base inside somewhat bearded.

In the desert-country on the lower Murray-River.

The flowers of this particular species according to Dr. Lucas are intensely fragrant.

Extends to South Australia and New South Wales.

Ptilotus exaltatus.

Nees, in Lehmann plantæ Preissianæ i. 630 (1845).

Stems erect, stout, mostly somewhat branched; lower leaves obovate or lanceolar, stalked; upper leaves sessile, smaller and mostly narrower, all of firm consistence and usually waved, glabrous or rarely hirsute; spike dense, elongated; bracts acutely pointed, brown at the back or towards the midnerve; sepals rather long, red at the summit, the inner sepals towards the base inside woolly.

In the desert-country on the lower Murray-River.

Extends through the whole of the arid interior tracts of Australia, reaching in desert-regions the south-, west- and north-coast.

Ptilotus alopecuroides.

F. v. Mueller, fragmenta phytographiæ Australiæ vi. 227 (1868).

Stems almost herbaceous, usually erect and simple, stout, as well as the leaves slightly downy; leaves narrow, the lower much elongated, flaccid, the upper leaves few and shorter, all crisp at the margin; spike dense, at last very long; bracteoles totally transparent, glabrous, rounded at the summit, with a very faint midnerve; sepals pale green-

yellowish, seldom slightly purplish, all at the base inside almost unbearded.

On sandy ridges and also on light pasture-land on the lower Murray-River.

Extends throughout the desert-regions of nearly all Australia, intratropical as well as extratropical.

Ptilotus obovatus.

F. v. Mueller, fragmenta phytographiæ Australiæ vi. 228 (1868).

Almost shrubby, grey or whitish from a starry vestiture, much branched; leaves obovate, oblong or less frequently roundish or rhomboid, mostly short-stalked or sessile; spikes head-like; bracts brown at the back, nearly half as long as the calyx; sepals usually rather short, pale or pink at the summit.

On sandy desert-ridges of the lower Murray-River.

Extends through the whole desert-country of Australia.

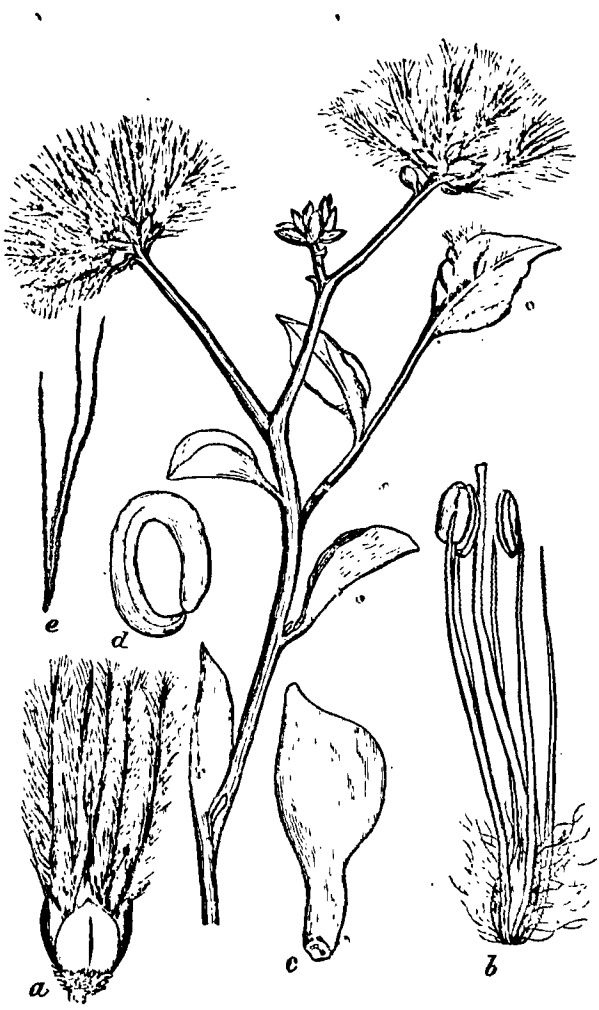


FIG. 37.—*a*, flower with bract and bracteoles; *b*, stamens (two of which sterile) and pistil; *c*, fruit; *d*, embryo with central albumen; *e*, articulated hair from the outside of the sepals; all magnified.

PHYTOLACCEÆ.

R. Brown, in Tuckey's narrative of an expedition to explore the river Congo, appendix v. 454 (1818).

GENERA:

Codonocarpus: Calyx toothed or nearly entire. Petals none. Stamens 14 or more, in a single row. Anthers almost sessile. Ovaries numerous, adnate around a central upwards dilated column, each with 1 ovule and 1 narrow stigma. Fruitlets coherent into a bellshaped-obconical fruit, bursting along the inner edge. Seeds with a minute basal appendage. Albumen very scanty. Embryo oblique annular.—Trees never very high or tall shrubs; leaves scattered, narrow or broad, flowers of either sex usually on distinct plants; flowers in leafless racemes or the pistillate flowers solitary; valves of the fruitlets membranous.

Didymotheca: Calyx toothed or lobed. Petals none. Stamens 6 or more, in a single row. Anthers almost sessile. Ovaries 2–8, adnate around a central column, each with 1 ovule and 1 narrow stigma. Fruitlets bursting along the outer edge. Seeds with a basal appendage (aril). Albumen very scanty. Embryo oblique annular.—Herbs or shrubs; leaves scattered, narrow, carnulent; flowers of either sex on distinct plants, axillary; valves of the fruitlets rigid.

CODONOCARPUS.

All. Cunningham, in Hooker's Botanic Miscellany i. 244 (1830).

Represented in continental Australia only.

Name from the arrangement of the fruitlets, so as to give the whole plant a bellshaped appearance.

SPECIES:

Codonocarpus cotinifolius.

F. v. Mueller, Plants of Victoria i. 200 (1862).

Leaves lanceolar or obovate or rhomboid, blunt or acute, slender-stalked; stipules extremely minute; stamens 15–20; stigmas exceedingly short; fruits hardly half as long as their stalks, consisting of 20–40 fruitlets; seeds wrinkled.

Rare in the vicinity of Lake Hindmarsh among the Sandarac-Cypresses, more frequent in the sandy scrub-country on the lower Murray-River.

Extends very sparsely through a vast extent of the Australian deserts.

Species-name from the resemblance of the leaves to that of the Scotino-bush (Rhus Cotinus of Linné).

DIDYMOTHECA.

J. Hooker, in the London Journal of Botany vi. 279 (1847).

Represented in Australia only.

Name from the first species rendered known, remarkable for its fruitlets only two and comparable to a double seedvessel.

Didymotheca pleiococca.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 202 (1859).

Shrubby; branchlets scarcely angular; leaves pointed; calyx almost flat-expanded, its teeth short and more than four; stamens 8–17; styles and fruitlets 3-8 or rarely more.

In the Mallee-scrub, chiefly on sand-hills, from the Wimmera to the Murray-River and to the north-western boundary of the colony.

Extends widely over the desert-country of Australia, particularly its extratropic regions.

Species-name in reference to the fruit, consisting of more than two fruitlets.

FIG. 38.—*a*, male flower, seen from above; *b*, the same from beneath; *c*, longitudinal section of female flower; *d*, a seed; *e*, longitudinal and transverse section of fruit; all magnified.

FICOIDEÆ.

A. L. de Jussieu, genera plantarum 315 (1789).

Name from Ficoides, as applied by Tournefort to the genus Mesembrianthemum, because some species have edible somewhat fig-like fruits.

GENERA:

Mesembrianthemum: Tube of the calyx fully adnate; lobes 2–8, very prevailingly 5, unequal. Petals and stamens many or numerous. Stigmas and ovary-cells 4–20, rather predominantly 5; the stigmas narrow elongated and simple or rarely divided into capillary segments. Fruit with cells radiating from a central axis, slit towards and at the depressed summit. Seeds in each cell many.—Herbaceous and also more or less shrubby plants, very carnulent, mostly glabrous, not unfrequently without any stem; leaves usually opposite, sometimes crowded, not rarely glittering-pustular, seldom by pairs united into a globe and very exceptionally lobed, always without stipules; flowers axillary or more usually terminal, stalked or sessile, solitary or less often 2 or more on a common stalk, in most instances comparatively large; petals always narrow, of various and often brilliant color, rarely connate into an exserted tube; fruit hygroscopic; seeds minute.

Tetragonia: Tube of calyx adnate; lobes 3–5. Petals none. Stamens few or several or numerous, rarely 2 or 1. Anthers linear or oval or rarely broadly bilobed. Stigma and ovary-cells 1–9, each of the latter with one ovule; the stigmas narrow and simple. Outer portion of the fruit succulent; inner very hard and 1–9-celled.—Herbaceous or somewhat woody rarely quite shrubby plants, succulent and mostly glittering-pustular; leaves scattered, without stipules; flowers small, mostly axillary or somewhat racemous or spicate, sometimes only in part fertile; stamens usually placed towards the bends of the calyx, in any sterile flowers generally more numerous; fruit often expanded into angular or horn-like or flat appendages.

Mollugo: Sepals 5. Petals none. Stamens few or several (3–24). Sterile stamens awlshaped-linear or forked, indefinite in number or wanting; those alternating with the sepals substitutes for petals. Ovary free, 3–5-celled, with numerous ovules. Stigmas 3–5, narrow. Fruit membranous, completely 3–5-celled, opening by loculicidal dehiscence. Seeds several or numerous.—Herbaceous often annual plants; stem-leaves scattered or crowded at intervals or all leaves radical; stipules minute; flowers mostly small, variously disposed.

MESEMBRIANTHEMUM.

Breyn, prodromi fasciculus rariorum plantarum secundus 67 (1689)

Represented by a vast number of species in South-Africa, by few in the countries at and near the Mediterranean Sea, extratropic Australia, New Zealand, Polynesia, Chili, Peru, Guiana and California.

Name from the Greek, indicative of the expansion of the flowers under bright light particularly of the midday-sun.

SPECIES:

Mesembrianthemum australe.

Solander, in G. Forster florulæ insularum australium prodromus 90 (1786).

Stems creeping; leaves cylindrical, bluntly triangular, smooth; flowers rather large, stalked, solitary; calyx 5-lobed, glabrous, two of

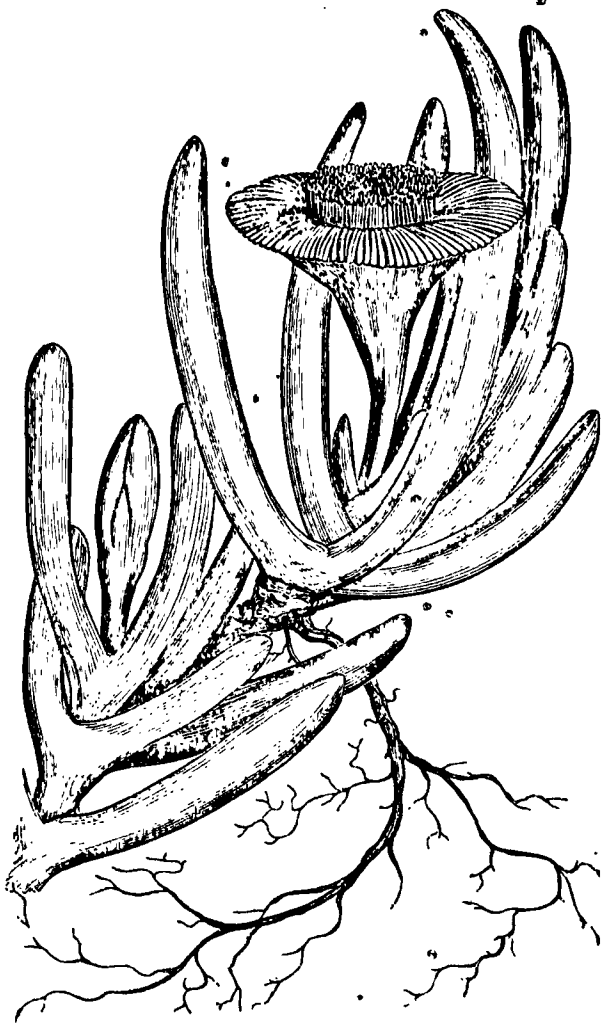


FIG. 39 (A).

the lobes thick and triangular, considerably longer than the three others; petals red, in two or few rows, twice or three times as long as the shorter lobes of the calyx; sterile stamens none or few; fertile stamens very numerous, much shorter than the petals, free, beyond the bearded base glabrous; anthers pale-yellowish; styles 5 or rarely 4; fruit at the convex summit with 5 or rarely 4 radiating prominent lines; seeds oblique pearshaped-oval, brown, not rough.

Along the coast and in saline places frequent.

Extends widely over extratropic Australia, also to New Zealand and Polynesia.

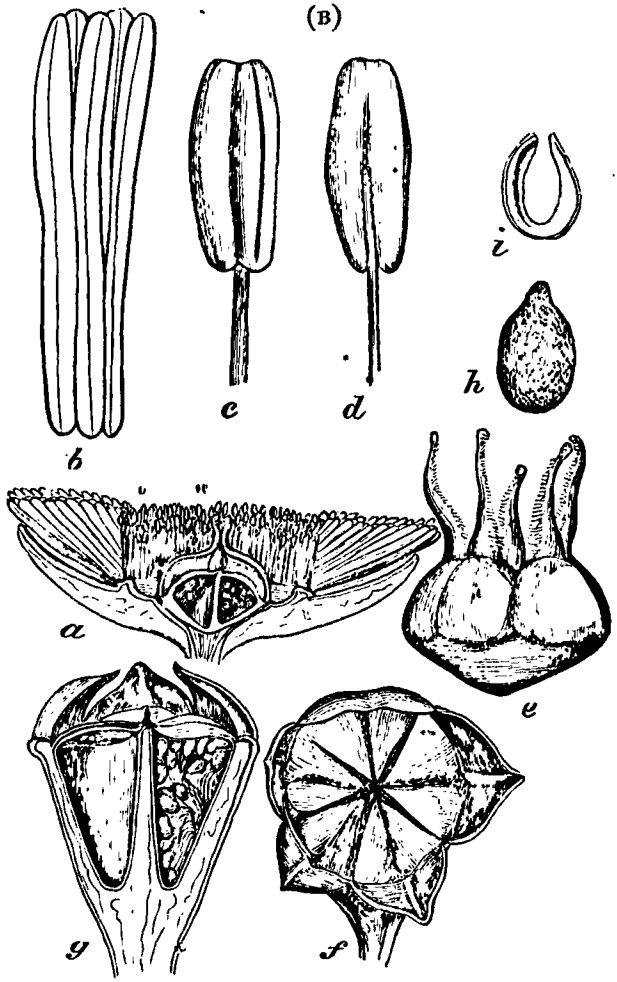


FIG. 39 (B).—*a*, longitudinal section of flower; *b*, petals; *c* and *d*, front- and back-view of a stamen; *e*, pistils; *f*, fruit, seen from above; *g*, longitudinal section of fruit; *h*, seed; *i*, embryo; all magnified.

Mesembrianthemum æquilaterale.

Haworth, miscellanea naturalia 77 (1803).

Stems creeping or rarely their branches somewhat erect; leaves rather large, semicylindric, sharply triangular, smooth connate at the base, usually somewhat compressed; flowers stalked, large, solitary; calyx 5-lobed, glabrous, two of the lobes thick, triangular and much longer than the three others; petals red, as well as the stamens very numerous; styles and ovary-cells 6–10; outer portion of the fruit very pulpy; seeds brown, smooth.

Along the whole coast and also in saline localities inland, not rare.

Extends through extratropic Australia, also to New Zealand and the west coast of America.

TETRAGONIA.

Linné, genera plantarum 144 (1737).

Represented in South-Africa, Eastern Asia, Polynesia, New Zealand, extratropic South America and Australia.

Name from the quadrangular fruit of most species.

SPECIES:

Tetragonia expansa.

Murray, commentationes Gœttingenses vi. 13, t. 5 (1783).

Prostrate, annual or biennial; leaves when well developed mostly deltoid-rhomboid; flowers subsessile or on stalks shorter than the calyx, mostly bisexual, axillary, solitary or less often two together; upper lobe of the calyx much broader than long, semiorbicular or dimidiate-elliptical, the other lobes mostly deltoid, all connivent, slightly yellow inside; stamens usually about 16; styles short, generally 8, occasionally 4–7 or 9; fruit green, broader upwards, or almost roundish, angular or slightly compressed, 4–9-celled, its hard inner portion towards the summit protracted into 4 acute teeth, sometimes unequally 8-toothed or without teeth, at the base excavated, at the summit with as many ridges as fruit-cells; seeds generally more than 4.

At Port Phillip Heads, Sealer's Cove and a few other places of the Victorian coast, also on the Murray-River; known as the "New Zealand Spinage."

Extends very sparsely along the coast-lines and through the saline desert-tracts of extratropic Australia, also to New Caledonia, Eastern Asia, Western South America and New Zealand.

Tetragonia implexicoma.

J. Hooker, flora Tasmanica i. 148 (1859).

Climbing or amply trailing, shrubby; leaves rhomboidal or verging into an oval oblong or lanceolar form; flowers long-stalked, solitary or

two together, downy, only partially fertile; lobes of the calyx 4 rarely 5, semilanceolar, nearly twice as long as broad, almost of equal size, intensely yellow inside; stamens generally 12–16; styles 2 rarely 3 or 4, rather long; fruit almost spherical, red, somewhat succulent, its hard inner portion 2- rarely 3- or 4- or 1-seeded and without teeth or appendages, dilated downward.

Over sand-ridges and particularly rocks and trees spreading along our whole sea-shores, often pendent in graceful festoons, and exposed to the spray of the sea.

Fig. 40 (A).

Extends to Tasmania and New South Wales and westward around the coast as far as Shark-Bay, occurring likewise in New Zealand and the Chatham-Islands.

Also an antiscorbutic spinage-plant.

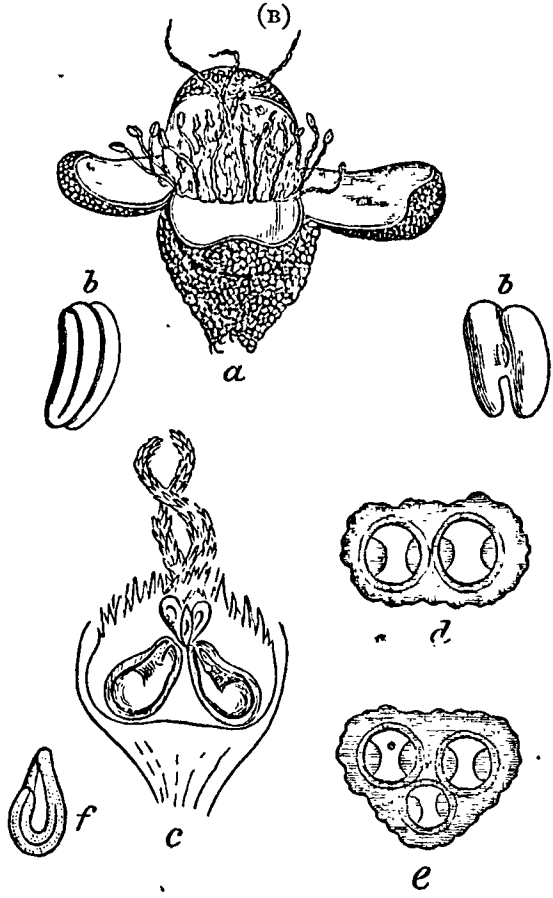


FIG. 40 (B).—*a*, flower; *b*, side- and back-view of an anther; *c*, longitudinal section of a pistil; *d* and *e*, transverse section of two fruits; all magnified.

MOLLUGO.

Linné, genera plantarum 336 (1737).

Represented in the hotter regions of both hemispheres.

Name from the soft-downy vestiture of most of these plants, or from some resemblance of one species to the European Galium Mollugo, that being the Mollugo of Bauhin and de l'Obel.

This genus forms a transit from Ficoideæ to Caryophylleæ.

SPECIES:

Mollugo Glinus.

Ach. Richard, tentamen floræ Abyssinicæ i. 48 (1847).

Starry-downy, procumbent; leaves usually approximated by fours, oval or orbicular, narrowed into a wedgeshaped base; flowers in axillary fascicles; sepals large, acute; fertile stamens 5–20; sterile stamens forked, rarely absent; stigmas 5 seldom 4 or 3; fruit usually 5-valved; placentas nearly as long as the cells; seeds very numerous, of about double the size of their spongy appendage, laxly encircled from the hilum by a hair-like process.

Fig. 41 (A).

On the sandy sometimes overflown banks of the Murray-River, there also at the margins of lagoons and of shallow depressions after the recess of water.

Extends to many parts of subtropical and of tropical Australia, Asia and America, also from the south to the north of Africa and likewise over South-Europe.

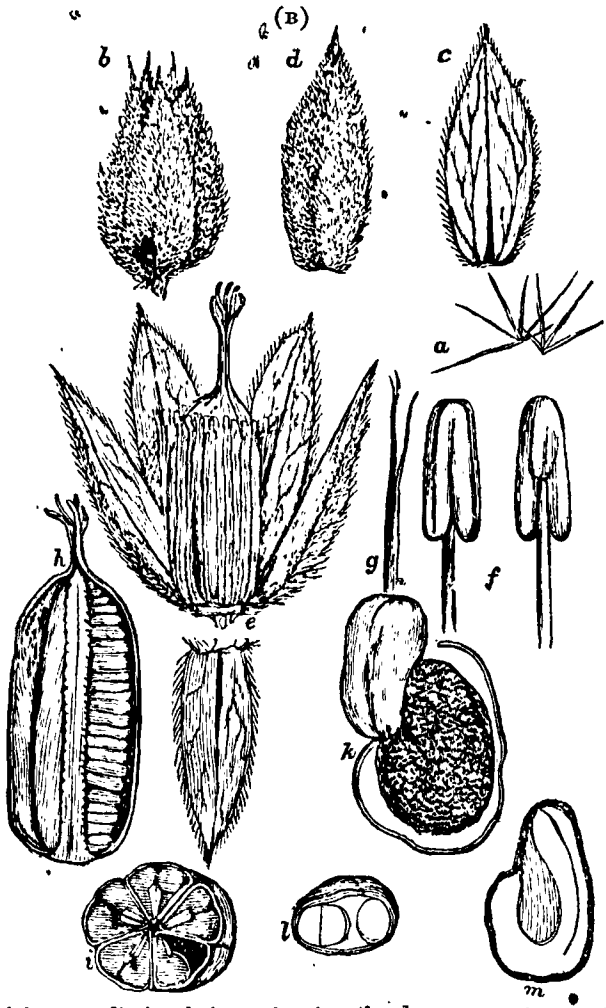


FIG. 41 (B).—*a*, radiating hair, as forming the downy covering of the plant; *b*, calyx closed; *c*, inner side of a sepal; *d*, outer side of a sepal; *e*, calyx opened to show the stamens and pistil; *f*, front- and back-view of anthers; *g*, sterile stamens; *h*, longitudinal section of ovary; *i*, transverse section of ovary; *k*, seed with its appendages; *l*, transverse section of a seed; *m*, longitudinal section of a seed.

Mollugo Spergula.

Linné, species plantarum editio altera 131 (1762).

Stems almost unilateral-downy, procumbent; leaves nearly glabrous, in whorl-like fascicles, oval-oblong, narrowed into a wedgeshaped base, or almost linear; flowers mostly in axillary fascicles; sepals small, obtuse, nearly glabrous; fertile stamens 3–10; sterile stamens forked or undivided or often absent; stigmas 3; fruit 3-valved; placentas nearly as long as the cells; seeds very numerous and exceedingly small; appendage very minute, oval, emitting a laxly encircling hair-like process.

On the sandy periodically inundated banks of the Murray-River and around its back-waters.

Extends to subtropical and tropical Australia, Asia and most parts of Africa.

Mollugo Cerviana.

Seringe, in Candolle prodromus i. 392 (1824).

Glabrous; stems short, exceedingly thin, erect or diffuse; stem-leaves narrow-linear, rarely somewhat broad, whorl-like crowded; flowers very small, trichotomous or umbellate or fasciculate, on capillary stalklets; fertile stamens 3–5; sterile stamens absent; stigmas 3; fruit 3-valved; seeds semiovate, very minute, without any appendage.

Near the lower Murray-River.

Extends to subtropical and tropical Australia, Asia and Africa, and also to South-Europe.

POLYGONACEÆ.

A. L. de Jussieu, genera plantarum p. 82 (1789), from B. de Jussieu (1759).

GENERA:

Polygonum: Flowers mostly bisexual. Sepals 5, rarely 4 or 3, nearly equal, not or hardly enlarged in age. Stamens 5–8, rarely 4 or 9. Styles 2 or 3. Stigmas capitate. Fruit triangular or compressed. Albumen starchy or somewhat horny. Cotyledons broad or narrow.—Herbaceous or seldom slightly woody plants; stems knotted; leaves entire or very rarely lobed, sometimes marked with a large dark spot; flowers small, variously arranged, clasped by bracts; their stalklets jointed; sepals often petaloid-colored; fruit small, covered by all the sepals.

Muehlenbeckia: Flowers mostly unisexual. Sepals 5, nearly equal, usually enlarged and succulent in age. Stamens 8, rarely less. Styles 3. Stigmas generally fringed. Fruit triangular or globular.

Cotyledons narrow.—Herbaceous or much oftener woody plants; leaves entire, rarely lobed; flowers small, variously arranged, clasped by bracts; those of each sex on distinct plants; their stalklets jointed; sepals not petaloid-colored; fruit small, enclosed in the usually baccate calyx; seeds often longitudinally 3-furrowed.

Rumex: Flowers bisexual or less frequently unisexual. Sepals 6 or very seldom 4; the three outer sepals finally spreading or recurved; the three inner sepals larger, appressed and often with a callous enlargement of the midnerve. Stamens 6, very seldom 4. Styles 3 or very rarely 2. Stigmas bearded or fringed. Fruit triangular, very seldom lenticular. Cotyledons narrow.—Herbaceous or rarely woody plants; stem often knotted; leaves entire or sometimes lobed, often crisped; flowers mostly whorled; their stalklets jointed; sepals usually not petaloid-colored unless red, the inner sepals covering the small fruit, but never becoming conspicuously succulent.

POLYGONUM.

Tournefort, institutiones rei herbariæ 510, t. 290 (1700).

Represented in countries of all zones.

Name, arisen already in the writings of Dioscorides and accepted by Columella and Plinius, given by them to one species of this genus, P. aviculare of Linné, now an almost cosmopolitan weed, well deserving that name for the numerous joints of its stem and branches.

SPECIES:

Polygonum plebejum.

R. Brown, prodromus floræ Novæ Hollandiæ 420 (1810).

Procumbent, compact, glabrous; leaves very small, from linear to oblong and somewhat spatular, mostly recurved at the margin, as well as the joints usually very short; stipules small, fringy-lacerated, transparent, very shining; flowers 1–6 at the axils; sepals green, with white margin, very small; stamens 8, rarely fewer; fruit acutely triangular, very shining, smooth; radicle facing the sides of the cotyledons.

On the Murray-River and its lower tributaries.

Extends to South Australia, New South Wales, Central Australia and Queensland, thence to South-Asia, various parts of Africa and South-Europe (Sicily).

The allied European and North-Asiatic but here only introduces P. aviculare (L. sp. pl. 362) differs in larger size of all parts and especially so also in its flowers and fruits, the latter moreover being opaque and slightly rough and streaked, while the stipules are more nerved, the leaves more frequently flat and the root never perennial.

Polygonum strigosum.

R. Brown, prodromus floræ Novæ Hollandiæ 420 (1810).

Laxly erect or scrambling; leaves oblong- or oval-lanceolar, with a truncate or cordate or oftener halberd- or arrow-shaped base, mostly on the midnerve as also along the branches and leafstalks beset with stiff reversed hair or bristles unless sometimes merely rough; stipular tube often hairy-fringed; flowerstalks dichotomously branched, glandular-downy, bearing few-flowered spikes; bracts ciliar-denticulated; stamens 5–6; styles 2 or 3; fruit smooth, angular, lustrous; radicle facing the edges of the cotyledons.

Along river-banks and brooks, particularly in forest-valleys.

Extends to Tasmania and East-Australia, and reappears in Southern and Eastern Asia and the adjoining islands.

Species-name from the rigid hairiness.

Polygonum prostratum.

R. Brown, prodromus floræ Novæ Hollandiæ 419 (1810).

Perennial, depressed or procumbent, more or less beset with scattered appressed hair; leaves lanceolar, on very short stalks; stipular tube ciliated, sometimes herbaceous-protracted on the summit; spikes axillary and terminal, not much elongated, dense-flowered, short-stalked; stamens 5–6; styles 2; fruit lentil-like compressed; radicle facing the edges of the cotyledons.

In moist valleys and along river-banks and streamlets.

Extends sparsely through the southern and extratropic eastern portions of the Australian Continent, also to Tasmania and New Zealand.

Polygonum subsessile.

R. Brown, prodromus floræ Novæ Hollandiæ 419 (1810).

Perennial, ascendant, appressed-hairy; leaves elongated-lanceolar, on very short stalks; stipular tube long-ciliated; spikes dense, usually few only in a terminal panicle; sepals smooth; stamens 5; styles 2; fruit lentil-like compressed, very shining and smooth; radicle facing the edges of the cotyledons.

Along rivers and brooks, particularly those descending from the Australian Alps.

Extends to Tasmania, nearly the whole of littoral East-Australia and Polynesia.

Polygonum Hydropiper.

Linné, species plantarum 361 (1753).

Annual, erect or somewhat depressed, almost glabrous; leaves lanceolar, rarely oblong, subtle gland-dotted; stipular tube inflated, often ciliated; spikes lax, terminal, interrupted, very slender, usually elongated; sepals often 4, green or less commonly pale or red, copiously beset with

glandular dots; stamens 6, rarely 4–5 or 7–8; styles 2 or sometimes 3; fruit plane-convex or less frequently triangular, finely granular-streaked, opaque; radicle facing the edges of the cotyledons.

Along water-courses, around lakes, swamps and lagoons, and in often inundated places not rare.

Extends to East-Australia and also widely through the extratropic regions of the north hemisphere.

Species-name the Latin of the vernacular "Water-pepper" of this highly acrid plant.

Polygonum minus.

Hudson, flora Anglica i. 148 (1762).

Annual, erect or somewhat depressed, almost glabrous; leaves narrow-lanceolar rarely linear-narrow; stipular tube close, ciliated; spikes rather slender, often forming a terminal panicle; sepals very short, glandular only on the base; stamens 5–6, rarely 7–8; styles 2–3; fruit lustrous, quite smooth; radicle facing the edges of the cotyledons.

On moist places not uncommon.

Extends through most parts of extratropical and also eastern tropical Australia; frequent likewise in New Zealand, in most parts of Asia and Europe, occurring also in Africa and (perhaps introduced) in America.

Polygonum lapathifolium.

Linné, species plantarum 360 (1753).

Annual, tall, usually erect and almost glabrous; leaves broadly or elongated-lanceolar or the lowest oval and the uppermost narrow, all gland-dotted beneath; stipular tube only scantily or not ciliated; spikes stout, on usually glandular stalks, forming a terminal somewhat leafy panicle; sepals 4–5, greenish pale or red, mostly glandular; stamens 5–6 or rarely 7–8; styles 2, rarely 3; fruit strongly compressed, seldom triangular; radicle facing the edges of the cotyledons.

In humid localities, especially along water-courses not rare.

A variety, densely white-downy particularly on the under side of the leaves, found on the drier banks of the Snowy-River.

Extends to Tasmania, South Australia, New South Wales and Queensland, occurring beyond Australia also in most other parts of the globe, but rarer in the western hemisphere than in the eastern.

Species-name from the resemblance of the leaves to those of some species of Dock (Rumex).

MUEHLENBECKIA.

Meissner, genera plantarum vascularium 316 (1840).

Represented in Australia, New Zealand, Norfolk Island, New Guinea and both Americas, so far as hitherto known.

Name in honor of Dr. H. G. Muehlenbeck, surgeon in Alsace, a close observer of the plants of that province. By strict right of priority

Sarcogonum (G. Don, in Sweet's hortus Britannicus, third edition, 577, anno 1839) takes precedence, unless better still Muehlenbeckia becomes transferred to the older genus Coccoloba of Linné and Jacquin.

SPECIES:

Muehlenbeckia axillaris.

J. Hooker, in the London Journal of Botany vi. 287 (1847).

Perennial, dwarf, procumbent, matted; leaves copious, small, usually oval or almost orbicular; flowers in axillary clusters or even solitary; stigmas not distinctly fringed; fruit-calyx often very succulent; real fruit acutely triangular.

In the alpine and subalpine regions, particularly on the gravelly margins of brooks or on otherwise irrigated places.

Extends to New South Wales, Tasmania and New Zealand.

Muehlenbeckia adpressa.

Meissner, plantarum vascularium genera 327 (1843).

Tall and winding or spreading or trailing, woody towards the base; leaves copious, roundish-cordate or verging into an halberdshaped or broadly lanceolar form; spikes interrupted, nearly all axillary, crowded or solitary, mostly simple or some reduced to clusters; stigmas acute, nearly sessile, not distinctly fringed; fruit-calyx withering or finally very succulent; real fruit globular, faintly and obtusely angular, smooth, not very lustrous; seeds longitudinally furrowed.

On coast-shores abundant; also in copses as well as in desert-scrubs and in forest-land.

Extends widely through extratropic Australia, reaching Shark-Bay northward and Tasmania southward.

In favorable maritime localities only the enlargement of the calyx into a berry-like form and into a pale-lilac transparency takes place.

Muehlenbeckia Cunninghami.

F. v. Mueller, fragmenta phytographiæ Australiæ v. 91 (1865).

Tall, shrubby, intricately branched, lax, glabrous; branchlets streaked, spinescent in age; leaves linear or verging into a narrow-oblong or lanceolar form, fugacious or undeveloped; flowers in each axillary cluster few or several or forming spike-like racemes; sepals withering; stigmas not fringed; fruit brown-black, very shining, longer than broad, triangular, acute, smooth; albumen not furrowed.

In swamps and inundated places particularly with a clayey bottom, rarer in the southern districts, commoner in the northern, never in the mountains.

Extends widely through the lowlands of the Australian Continent.

Species-name in honor of Allan Cunningham, the naturalist of Admiral King's and Capt. Oxley's expeditions, who regarded this plant

as a Polygonum; hence the designation of "Polygonum-Swamps" in the works of Australian geographic explorers and in subsequent colonial phraseology for localities of this species.

Muehlenbeckia polygonoides.

F. v. Mueller, fragmenta phytographiæ Australiæ v. 73 (1865).

Almost shrubby, erect or somewhat depressed, glabrous, glaucous; leaves linear or some lanceolar rhomboid or narrow-halberd-shaped, never copious; flowers in each axillary cluster only few or occasionally solitary; stalklets shorter than the withering sepals; fruit black, shining, roundish and faintly triangular, blunt, smooth; albumen not furrowed.

On sand-ridges near the Wimmera and Murray-River rare, and rarer still in granitic detritus far down on the Snowy-River.

Extends to South Australia and New South Wales.

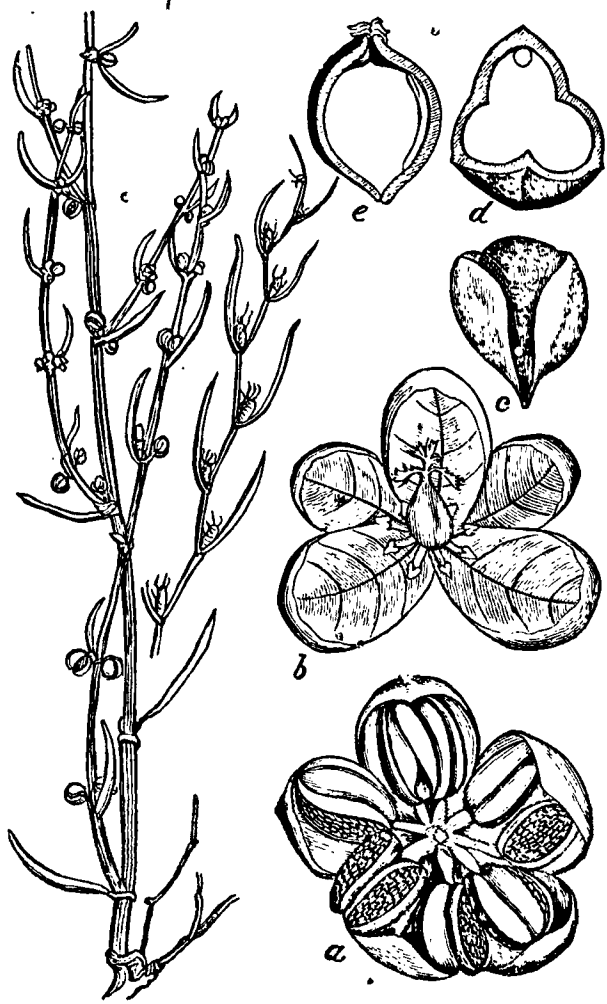


FIG. 42.—*a*, male flower, seen from above; *b*, female flower, expanded; *c*, side-view of fruit-calyx; *d*, transverse section of a fruit; *e*, longitudinal section of a fruit; all magnified.

Muehlenbeckia stenophylla.

F. v. Mueller, fragmenta phytographiæ Australiæ i. 138 (1859).

Half-shrubby, erect, glabrous; branchlets very thin; leaves narrow-linear, carnulent; flowers in each axillary cluster few; stalklets nearly as long as the sepals; stigmas almost sessile; fruit-calyx very succulent; real fruit black, opaque, longer than broad, triangular, acute, tubercular-wrinkled.

On rocks of the higher mountains towards the sources of the Mac Allister-River.

Species-name from the narrowness of the leaves.

Extends, as far as since ascertained, to no locality elsewhere.

RUMEX.[a]

Linné, genera plantarum 105 (1737).

Represented in nearly every country of the globe, but less numerously in hotter than in colder climes.

Name given by Columella, Plinius and other ancient authors to one or two species of this genus, in allusion to some faint resemblance of the leaves to the old Roman war-arms of the same appellation. English name: Dock.

SPECIES:

Rumex Brownii.

Campdera, monographie des Rumex 81 (1819).

Perennial; stems slightly branched or simple; lower leaves from a wedgeshaped or truncate or cordate or halberdshaped base elongated oblong or lanceolar, upper leaves narrower, floral leaves absent unless developed at the lowest whorls or diminutive; flowers bisexual; inner fruit-sepals deltoid- or oval-rhomboid, terminating in an awlshaped hooked apex and fringed by bristly also hooked lobes, devoid of any dorsal callus; fruit brown, acutely triangular, shining, smooth, somewhat longer than broad.

On dry as well as humid lands not uncommon.

Extends to South Australia, Tasmania and East-Australia, far into the tropics, at least to 19° of southern latitude.

Rumex flexuosus.

Solander, in G. Forster florulæ insularum australium prodromus 90 (1786).

Perennial; branches numerous, amply spreading, intricate-flexuous; lower leaves elongated-lanceolar, at the base rounded or angular, floral leaves gradually much narrower and shorter; whorls forming leafy

interrupted racemes, nearly all axillary, with several or few flowers or sometimes the flowers only in pairs or solitary, but nearly all bisexual; inner fruit-sepals deltoid- or lanceolar-rhomboid, gradually narrowed into a long apex, provided with few straight and mostly short teeth, prominently keeled, but destitute of any dilated callus; fruit brown, acutely triangular, shining, smooth, evidently longer than broad.

In the flat country on and towards the Murray-River.

Extends to South Australia, New South Wales and New Zealand.

Rumex crystallinus.

Lange, index seminum horti botanici Hafniensis 1861, p. 28; Botanisk Tidsskrift, 2 Række, tab. iv. (1874).

Rather dwarf; root fascicular; stems branched; leaves lanceolar or the upper broad-linear, with a halberdshaped or blunt base; whorls nearly all axillary, not distant, with numerous bisexual flowers; inner fruit-sepals very small, rhomboid-lanceolar, acutely pointed, provided on each side with 1 or 2 awlshaped almost straight lobes and with a turgid dorsal callus; fruit minute, pale-brown, shining, somewhat longer than broad.

On brackish wet soil in the vicinity of the lower Murray-River and the Wimmera.

Extends from the inland regions of East-Australia to Carpentaria.

Species-name from the papillar or saline roughness, which is not always evident on this plant. Root according to Dr. Lange annual, but perhaps so considered, because of its producing flower-stems already in the first year of growth.

Rumex bidens.

R. Brown, prodromus floræ Novæ Hollandiæ 412 (1810).

Perennial; root creeping; stems very hollow, usually branchless; lower leaves elongate- or oblong-lanceolar, blunt or attenuated at the base, floral leaves gradually narrower; flowers unisexual; lower whorls axillary and predominantly female, the others mainly or solely male, the uppermost only destitute of floral leaves; inner fruit-sepals rather large, almost rhomboid, provided on each side with 1 or 2 narrow straight pungent lobes and with a mostly imperfect dorsal callus; fruit pale-brown, acutely triangular, shining, smooth, as broad as long.

In swampy localities not rare throughout our territory.

Extends to Tasmania, South Australia and New South Wales.

Several European species of Rumex have become very frequent already in our colony.

NYCTAGINEÆ.

A. L. de Jussieu, genera plantarum 90 (1789).

Name from A. de Royen's genus Nyctage, described in 1740; synonymous however with de l'Ecluse's Admirabilis, published in 1601; from which again Morison in 1680 obtained his co-ordinal Mirabilis, adopted by Linné; the first-mentioned appellation was suggested by the expansion of the flowers at night time.

GENUS:

Boerhaavia: Calyx 5-nerved; its lower portion finally surrounding the fruit; its upper portion bellshaped or funnelshaped, petaloid, deciduous. Stamens 1–4, rarely 5. Style elongated; stigma undivided. Ovary erect. Cotyledons folded, clasping the albumen.—Herbs or somewhat shrubby plants; leaves opposite; flowers bisexual, without any involucre, but with small bracts and bracteoles, usually paniculate; fruit-calyx often glandular.

BOERHAAVIA.

Vaillant, sermo de structura florum 50 (1718).

Represented in the warmer regions of the globe, extending northward to Spain.

Named in honor of Herman Boerhaave, of Leyden, one of the most learned men of all ages, the leading physician of his time, eminent also in advancing the knowledge of chemistry and plants, Director of the Bot. Garden of Leyden from 1709 till 1729.

SPECIES:

Boerhaavia diffusa.

Linné, flora Zeilanica p. 4 (1747).

Herbaceous, perennial, procumbent or ascendant, glabrous or downy; lower leaves roundish or almost oval; upper leaves often verging from a blunt base into a lanceolar form, either entire or wavy at the margin; flowers minute, pink, at last thinly and conspicuously stalked; limb of the calyx tender-membranous and fugacious; fruit-calyx when moistened mucilaginous.

In the northern tracts of the colony not rare.

Extends to most portions of the Australian Continent, also to intratropical and subtropical Asia and widely through Africa and Polynesia, but not so far south as New Zealand, nor so far north as Japan.

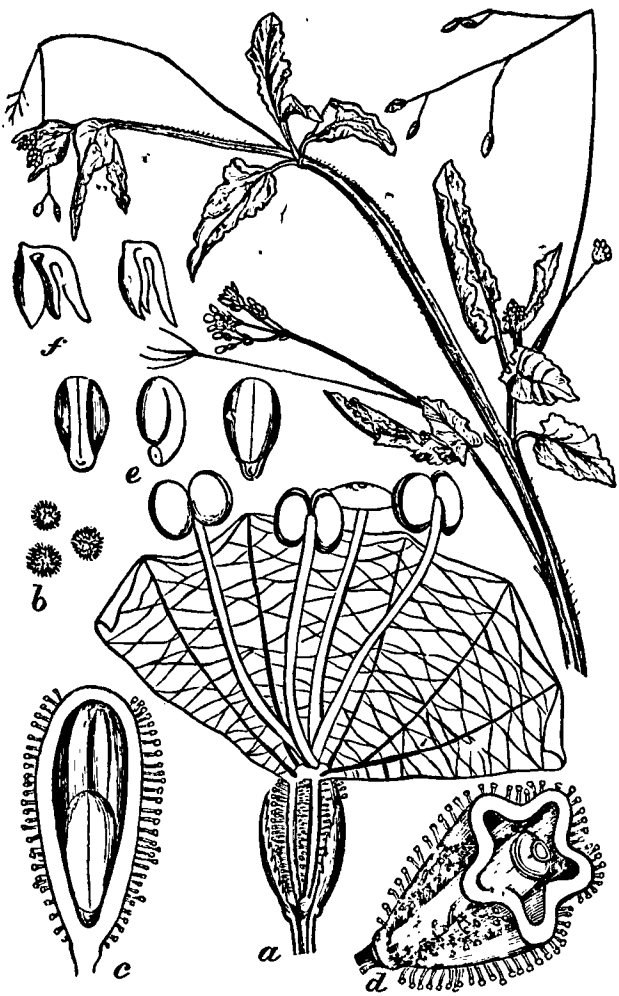


FIG. 43.—*a*, longitudinal section of a flower; *b*, pollen-grains; *c*, longitudinal section of fruit; *d*, transverse section of fruit; *e*, embryo and albumen in their natural position; *f*, radicle and cotyledons severed; all magnified.

OMISSIONS.

Ficoideæ, p. 9.—Leaves very seldom distinctly lobed.
Nyctagineæ, p. 9.—Calyx not always distinctly lobed.
Cabomba peltata, p. 15.—F. v. M. fragmenta phytographiæ Australiæ x. 77 (1876).
Drimys aromatica, p. 19.—

Fig. 44 (a).

(B)

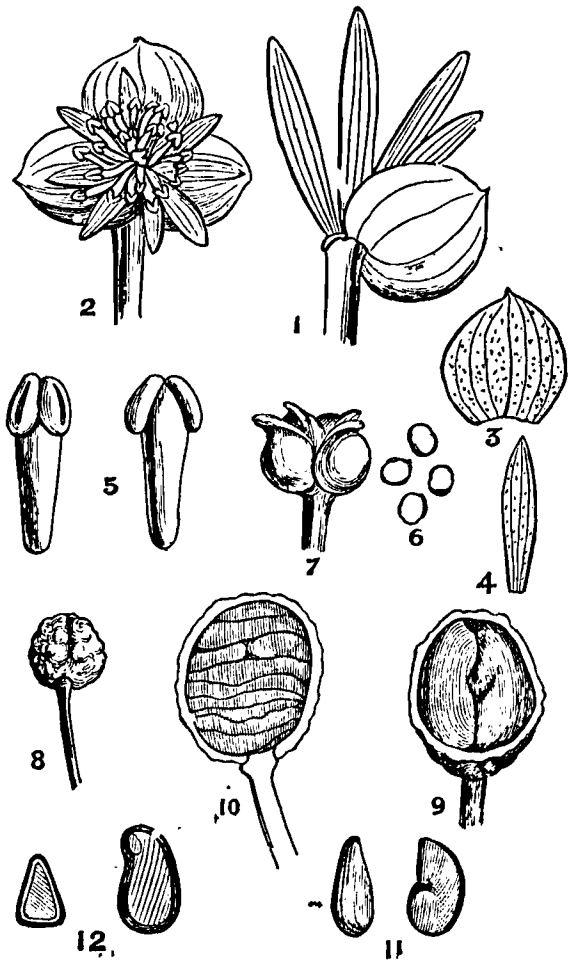


FIG. 44 (B).—Drimys aromatica; 1, unexpanded flower with leaves; 2, expanded flower; 3, sepal; 4, petal; 5, front- and back-view of a stamen; 6, pollen-grains; 7, ovaries; 8, a fruitlet; 9 and 10, transverse and longitudinal section of fruitlet, 11, seed; 12, transverse and longitudinal section of a seed.

Oxalis Magellanica, p. 88.—G. Forster, commentationes Goettingenses (1789).

Howittia trilocularis, p. 92.—In the Grampians, at Lake King, on the Genoa and near Cape Howe.

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(Synonyms in cursive letters.)

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